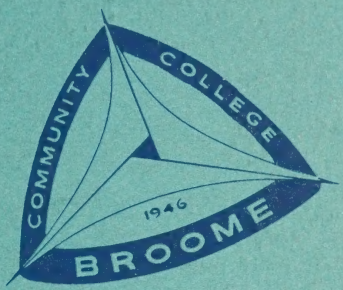
BROOME COMMUNITY COLLEGE



GENERAL CATALOG 1973–74

ACCREDITATION

Broome Community College is a member of the Middle States Association of Colleges and Secondary Schools.

The College is supervised by the State University of New York, and its curriculums are registered by the State Education Department.

The Civil, Electrical and Mechanical Technology programs are ECPD-accredited engineering technology curriculums. ECPD is the Engineers Council for Professional Development, a national organization of engineering societies.

The Dental Hygiene program is accredited by the Council on Dental Education of the American Dental Association, and the Nursing curriculum is accredited by the National League of Nursing.

The Council on Medical Education of the American Medical Association (AMA) has accredited three other curriculums—Radiologic Technology, Medical Record Technology and Medical Office Assistant, which is also accredited by the American Association of Medical Assistants. The Medical Record Technology program has double accreditation, too, having been approved by the American Medical Record Association as well as by AMA.

The College will change its academic calendar for the 1974-75 college year from the current system of three quarter terms of 10 weeks each to the semester terms of 15 weeks each. The College reserves the right to make modifications required by this program changeover, as well as for other necessary reasons.

FOR INFORMATION about the college, its programs and its admissions procedure, contact

Director of Admissions
Broome Community College
Binghamton, New York 13902

Phone 772-5001
area code 607

1973-74 CATALOG

OF

BROOME COMMUNITY COLLEGE

Binghamton, N. Y. 13902

A Comprehensive Community College

Supervised by the State University of New York

and

Sponsored by the County of Broome

CURRICULUMS of the COLLEGE

OCCUPATIONAL PROGRAMS

The following curriculums are designed to prepare graduates for immediate employment:

BUSINESS

- Accounting
- Marketing Management
- Executive Secretarial
- Engineering Secretarial

ENGINEERING TECHNOLOGY

- Chemical Technology
- Civil Technology
- Electrical Technology
- Mechanical Technology

HEALTH SCIENCES

- Dental Hygiene
- Environmental Health Technology
  (Suspended Temporarily)
- Medical Laboratory Technology
- Medical Office Assistant
- Medical Record Technology
- Nursing
- Radiologic Technology

UNIVERSITY-PARALLEL PROGRAMS

These curriculums are designed to prepare graduates for transfer to four-year colleges and universities in the third, or junior, year:

- Business Administration
- Engineering Science
- Liberal Arts and Sciences

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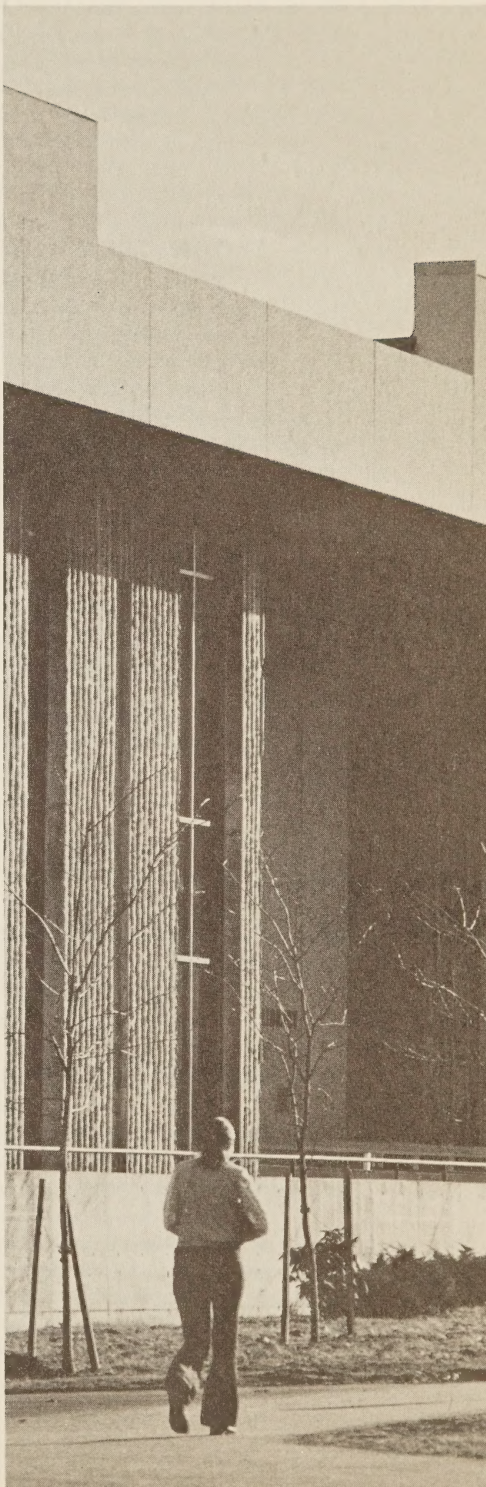


DEGREE PROGRAMS

Graduates of Broome Community College receive associate degrees, and the courses of study fall into four general categories—technical, business, liberal arts and health sciences. Liberal arts courses are included in all curriculums, as it is believed that students need more than technical competence to understand people and their daily working and personal inter-relationships.

Applicants to the College should consider carefully the type of program they wish to pursue, for the nature of the offerings makes it difficult for a student to switch from one curriculum to another after commencing his studies.

TECHNICAL PROGRAMS

In the area of technical education, the College offers five programs. One, Engineering Science, is in effect the first two years of an engineering curriculum, and students who do satisfactory work in it should experience little difficulty in transferring to engineering colleges at the third-year level.

The other four are designed to train engineering technicians in the fields of Mechanical Technology, Chemical Technology, Electrical Technology and Civil Technology. Graduates of these programs are prepared for immediate employment in various types of technical work upon leaving the college.

BUSINESS

The Business curriculum is designed primarily to prepare graduates for immediate employment in one of four fields—Engineering Secretarial, Executive Secretarial, Accounting, and Marketing and Sales. In addition, there is a fifth option, Business Administration. It combines more university-parallel preparation with a minimum of job-oriented courses for the person who plans to continue his college education for a baccalaureate degree, even though he or she may want to work for a while before transferring to a four-year college.

LIBERAL ARTS AND SCIENCES

This curriculum is a university-parallel course, designed especially for the student who wishes to transfer to a four-year college or university after graduation. A sound liberal arts education is basic to many of the professions, such as medicine, law or teaching, and applicants who have such a goal would be well advised to make this selection. It is also considered excellent preparation for further schooling in business administration.

HEALTH SCIENCES

Opportunities for men and women interested in the health sciences field are provided in seven areas—Dental Hygiene, Medical Office Assistant, Medical Record Technology, Nursing, Medical Laboratory Technology, Radiologic Technology and Environmental Health Technology.

Graduates of six of these curriculums are prepared to work immediately after graduation in physicians' or dentists' offices, laboratories or hospitals, while the Environmental Health Technology students are trained to fill jobs in controlling air and water pollution, in food sanitation and in ionizing radiation.

Graduates of these programs are also qualified to take whatever licensing examinations their professions require.

OBJECTIVES OF THE COLLEGE

1. To provide the environment and the experiences which promote the students' vocational competence, individual growth and social responsibility through integration of the following:

KNOWLEDGE. The acquisition of parts, principles, theories and insights which are fundamental to the understanding of a specialized field of study and of life itself. Cognizance of common sources of information for further intellectual growth.

PROFICIENCY. Development of analytical thinking and language abilities for the comprehension, evaluation and communication of knowledge. Development of laboratory techniques relevant to the students' chosen vocational fields.

ATTITUDES. The stimulation for personal growth—vocational, intellectual, cultural and physical. The appreciation of and commitment to desirable social values.

2. To commit the resources of the College to the business, industrial, educational and cultural enrichment of the community.

ADMISSIONS

A high school or state equivalency diploma is required for full-time entrance to all curriculums. Applicants must be recommended by their high school principal or guidance counselor and must meet the minimum requirements of physical ability required by the occupational field in which they wish to engage.

Application Procedure

An application for admission must be made on official forms supplied on request by the Admissions Office. Students are normally admitted for the fall term; applications will be processed at any time, however. It is possible to be admitted to the College at mid-year if the applicant has appropriate advance or transfer credit. The freshman class is selected by "rolling" admissions, which means that students are admitted as they apply, complete the admissions process and are found suitably qualified for a particular curriculum.

An application fee of $5 must accompany each application. This is non-refundable. Once a student is accepted, he will be billed for an advance payment of $50 on tuition. This is also non-refundable.

The Committee on Admissions may require an applicant to participate in an admissions counseling interview. Counseling interviews are not required of all who apply, but they may be requested by the applicant.

NOTE—Applicants who do not satisfactorily meet the entrance requirements may apply to enter the Collegiate Studies Certificate Program. This preparatory year program provides opportunity for the student to strengthen his academic background so that he may enter any degree program of the college with a better expectation of successful accomplishment.

Test Required

All applicants must take the American College Test (ACT) prior to registration. No substitute for the ACT will be accepted. When applying to take the ACT, Broome Community College must be listed and properly coded as a recipient of these scores. Broome Community College code number is 2684.

The ACT is given at designated centers throughout the United States five times a year —October, December, February, April and July. Information bulletins and registration forms for this test are available at any high school guidance office, at the Admissions Office at Broome Community College or by contacting the American College Testing Program, Box 168, Iowa City, Iowa 52240.

Readmission or Transfer

Applications for readmission or transfer to the College must be submitted to the Admissions Office prior to three weeks before the start of the term in which the applicant is requesting readmission. Applications received later than the above period may be returned to the applicant by the Director of Admissions without processing.

Transfer of credit from students who have been enrolled in other accredited colleges is subject to the approval of the chairman of the student's major department and the director of records. Grades earned at the college from which the student is transferring will not be entered into his cumulative grade-point average at Broome Community College. Students who have attended one or more other colleges must in all cases submit to the College Admissions Office an official transcript of work taken before formal acceptance will be granted.

Students transferring from other colleges will, as a general rule, be expected to complete a minimum of one year's work at Broome Community College, immediately prior to being granted the associate degree.

Credit by Examination

Advanced Placement Examinations and College Proficiency Exams:

Applicants who have completed any of the Advanced Placement or "Subject" Examinations sponsored by the College Entrance Examination Board or the College Proficiency Examinations sponsored by the University of the State of New York may apply for credit and advanced placement. Such requests will be handled in the same manner as transfer credit and will be granted where applicable, subject to the approval of the department chairman and director of records.

An examination for course credit may sometimes be given at the College, if a student makes such a request and can show evidence of ability or experience to indicate the likelihood that he will pass it. The examination must be taken before classes start in the particular course in which the student is seeking exemption.

The credit-by-exam concept is essentially the awarding of credit for theoretical knowledge gained outside the traditional classroom situation. The guidelines for this procedure are available from any of the College's department chairmen.

Entrance Requirements

In planning for college, it is advisable that each high school student enroll in a college preparatory curriculum. The following table should help in planning a high school program to prepare for admission to Broome Community College:

Curriculum	Recommended High School Subjects	Other Desirable High School Subjects
Business: Accounting Marketing Secretarial	*2 units Mathematics 2 units Science	College preparatory courses and Typewriting
Chemical Technology	*2 units Mathematics 2 units Science including Laboratory Science	Additional Mathematics and Science courses
Civil Technology	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Dental Hygiene	*2 units Mathematics Biology, Chemistry	Social Studies, Typewriting
Electrical Technology	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Engineering Science	Chemistry, Physics *3½ units Mathematics incl. Advanced Algebra	Additional Mathematics, Science and Technical courses
Liberal Arts and Sciences	*2½ units Mathematics 4 units in any combination of science, language, or additional mathematics	College Preparatory courses
Mechanical Technology	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Medical Laboratory Technology	*2 units Mathematics 2 units of Laboratory Science	Typing, Additional Mathematics and Science courses
Medical Office Assistant	*2 units Mathematics 2 units Science	Typing, Additional Mathematics and Science
Medical Record Technology	*2 units Mathematics 2 units Science	Typing, Additional Mathematics and Science
Nursing	*2 units Mathematics Biology, Chemistry	College preparatory courses
Radiologic Technology	*2 units Mathematics 2 units of Laboratory Science	Typing, Additional Mathematics and Science courses

*Academic units of Mathematics such as Algebra, Geometry or Trigonometry.

EXPENSES

Tuition and fees are payable at the Finance Office. All students will be required to pay their tuition and fees for the first quarter prior to registration. Any refund is at the option of the College.

Tuition

For New York State residents

With residency certificate ..... $600 per year
(Payable $200 at the start of the first term and $200 at the beginning of the second and third terms).

Without residency certificate ..... $1200 per year
(Payable $400 at the start of the first term and $400 at the beginning of the second and third terms)
See below for explanation of residency certificate.

For out-of-state residents ..... $1200 per year
(Payable $400 at the start of the first term and $400 at the beginning of the second and third terms)

After acceptance by the College, the student will be billed for an advance payment of $50. This will be applied toward the tuition payment for the first quarter, but it will not be refunded should the student withdraw either before or after registration. Tuition for all students is payable at the beginning of each quarter of the school year.

The responsibility for payment of tuition rests upon the student, and the student or parent is billed prior to the start of each term. Students will be suspended from classes if the established due dates for payment are not met.

SEE PAGES 16 AND 17 FOR FINANCIAL AID.

Tuition Refund Policy

Students who withdraw from classes during the first three weeks of a term will be entitled to tuition refunds on the following basis—100% refund during the first week, 75% during the second week and 50% during the third week. After three weeks of classes, there will be no refunds.

Residency Certificate

To qualify for the resident tuition fee, a student is required by law to present once each academic year on or before registration a residency certificate indicating that he or she has been a legal resident of the State of New York for one year and of a county for six months.

Broome County Residents—Full-time students admitted to the College will be mailed a copy of the application for residency certificate prior to registration. This application must be completed and presented at time of tuition payment.

Out-of-County Residents—Full time students admitted to the College will be mailed a copy of the application for residency certificate prior to registration. The application must be completed, notarized and presented to the **County Treasurer of the county in which the student resides.** The County Treasurer will then issue a residency certificate to the student. This residency certificate must be presented at the time of tuition payment.

Part-time students must meet the same requirements as stated above. The application for residency certificate form is available at the Finance Office and the office of the Continuing Education Division.

The completed residency forms are required once each academic year.

Fees

The following fees will be charged, with the College reserving the right to change any of them:

STUDENT ACTIVITY ..... $50 per year

The activity fee entitles students to admission to varsity games, dances and parties, as well as a subscription to the student newspaper and the opportunity to participate in a varied program of co-curricular activities, including intramural athletics.

HEALTH INSURANCE ..... $40 per year

This fee covers the cost of the student health insurance program. If a student is covered under family health insurance, however, a statement to this effect will be accepted instead of the health fee, if the statement is signed by a parent or by the student, if he or she is of age. This statement should cite the name of the insurance program under which the student is covered, and it should be turned in to the Finance Office.

ACCIDENT INSURANCE AND
HEALTH SERVICE FEE ..... $10 per year

This is a mandatory fee for all full-time day students. The policy covers the student for 12 months starting September 1, 1973, for expenses incurred in or out of any hospital, and regardless of any other insurance he or she has.

GRADUATION $10

This fee is paid at the start of the term preceding graduation.

ALUMNI LIFETIME MEMBERSHIP $20

Membership in the Broome Community College Alumni Association is optional. The lifetime dues are payable at the start of the term preceding graduation, and they entitle graduates to complete association benefits.

CHEMISTRY LABORATORY ..... $10 per year for all students taking chemistry laboratory courses with 200 numbers.

Living Accommodations

The College has no dormitory facility and assumes no responsibility for student housing. As a service to students, the Student Personnel Office maintains an up-to-date record of housing accommodations which landlords submit as being available. But this constitutes neither approval nor rating by the College. Housing arrangements must be made directly by students and parents with local landlords.

All students not living with their families while enrolled at the College must register with the Student Personnel Office within a few days. In addition, they must complete the housing form for each address that they have while attending the College. This form must be signed by the parents or guardians thus showing their approval of the students' housing accommodations.

Room and Board

The cost of room and board for out-of-town students is dependent upon the demands of the student. The average cost varies from $40 to $50 per week.

Books, Supplies, Uniforms

Students provide at their own expense the necessary books and instructional materials. These may be purchased at the College Bookstore maintained by the Faculty-Student Association for the convenience of the students. The cost varies, depending on the curriculum, from about $150 to $360 per year.

In addition, some curriculums require uniforms. Among these are Nursing, Radiologic Technology, Medical Laboratory Technology and Medical Office Assistant. Gym clothes are necessary for physical education classes. Dental instruments and uniforms for Dental Hygiene students cost approximately $200.

ACADEMIC STANDARDS AND REGULATIONS

Requirements for Graduation

Common requirements for all three degrees granted by the College:

1. Quarter point average must total 8.60 for a six-quarter program or the equivalent
2. Recommendation of the faculty for the awarding of the degree
3. Satisfaction of all obligations to the College

THE ASSOCIATE IN APPLIED SCIENCE DEGREE

This degree is given to graduates of these curriculums:

Accounting
Chemical Technology
Civil Technology
Dental Hygiene
Electrical Technology
Engineering Secretarial
Executive Secretarial
Environmental Health Technology
Marketing Management
Mechanical Technology
Medical Laboratory Technology
Medical Office Assistant
Medical Record Technology
Nursing
Radiologic Technology

4. Degree requirements: a minimum of 96 quarter credits

5. Curriculum requirements:
   a) A minimum of 60 credits in a student's major field. These are courses intrinsic to and required by the various curriculums.
   b) A minimum of 30 credits in general education or liberal arts courses.
      1) Social Sciences: a minumum of 9 credits
      2) Biological and Physical Sciences (including Mathematics): a minimum of 9 credits
      3) Humanities: a minimum of 9 credits in English (composition and/or speech)
      4) Electives (or additional courses) in the foregoing fields comprising a minimum of 30 credits in the liberal arts and sciences or general educational areas
   c) Satisfactory completion of all courses in a curriculum or as approved in a department

6. Satisfactory completion of required Summer Hospital Radiographic Technique program for Radiologic Technology students and clinical laboratory experience for Medical Laboratory Technology students

THE ASSOCIATE IN SCIENCE DEGREE

This degree is awarded to graduates of the Business Administration and Engineering Science curriculums and the Science Option in Liberal Arts and Sciences.

4. Degree requirements: a minimum of 96 quarter credits

5. Curriculum requirements:
   At least 45 credits in the humanities, natural sciences, mathematics, the social sciences

THE ASSOCIATE IN ARTS DEGREE

This degree is awarded to graduates in the Liberal Arts and Sciences curriculum.

4. Degree requiments: a minimum of 93 academic quarter credits and 3 credits in Physical Education.*

5. Liberal Arts and Sciences requirements: a minimum of 93 credits distributed as follows:

   a) Social Sciences: a minimum of 18 credits, of which 9 shall be in United States History or 9 in the Development of Western Civilization
   b) Biological Sciences and Physical Sciences: a minimum of 12 credits
   c) Mathematics: a minimum of 9 credits (this requirement may be waived if candidate has completed 3½ units of secondary mathematics through Advanced Algebra or the equivalent)
   d) English: a minimum of 18 credits, of which 9 shall be in composition and 9 in an approved literature sequence
   e) Humanities: a minimum of 9 credits (9 in Philosophy or 9 in a foreign language)
   f) Electives: 27 credits**
   g) Satisfactory completion of all courses in a curriculum or as approved in a department

*Exceptions to this requirement may be made by the Division Director for valid reasons.

**A maximum of 18 credits may be taken outside the offerings in Liberal Arts and Sciences with the approval of the Division Director. The determining guidelines will be documented transferability and applicability to the approved career objectives.

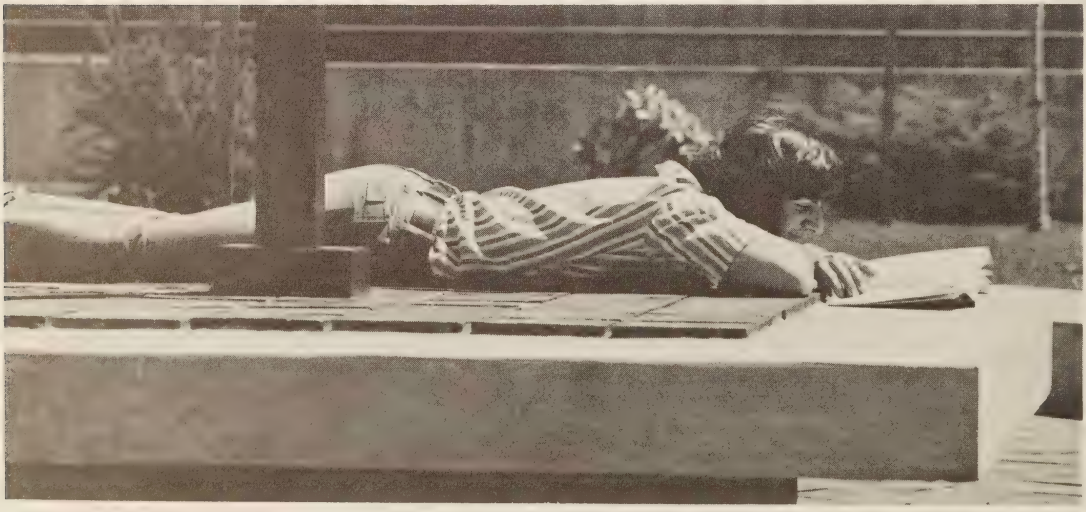
Grades

Grade	Honor Points Per Credit Hour	Explanation
A	4	Outstanding achievement in meeting the objectives of the course
B	3	Above average achievement
C	2	Average achievement
D	1	Below average achievement
P	0	Poor achievement—no honor points.
F	0	Failure to meet the objectives of the course
W	0	Withdrawal from course after the second week and before the end of the seventh week of term
WP WF	0	Withdrawn passing (WP) or withdrawn failing (WF). For students who withdraw from a course after the seventh week of the term and before the end of the ninth week. After nine weeks, the grade will be that recorded by the instructor (A, B, C, D, P, F, I, WP, WF).
I	0	Incomplete. Work to be made up within one week or by special arrangement with the department
S	0	Satisfactory. (Final grade for a non-credit course or a mid-term grade in a credit course to denote a student's progress.)

NOTE—Only grades of D, P, F, I, W will be reported to the student at mid-term.

In order for a student to remain in good standing, he or she must also demonstrate a mature attitude, interest and cooperation.

Grades are issued at the end of each term. Students will also be notified of their academic standing at the approximate mid-point of each term.



Honors

At the end of each term, students who have earned an average of 3.5 or better are named to the President's List. Those with averages between 3.0 and 3.49 are placed on the Dean's List. Students must complete a minimum of 12 credit hours for a term to be eligible for either list, and they must have no F or WF grade.

Academic Probation

A student is placed on academic probation for any of the following reasons:

If he or she does not earn a grade point average of:

1.2 the first term
1.4 the second term
1.5 the third and all other terms

OR

If the student receives an "F" in any course.

Dismissal

Students may be considered for dismissal for the following causes: More than one consecutive probationary period, more than one failing grade in a term, failure to earn a point average of 1.0 in any term, irregular attendance, neglect of work or financial obligations, failure to comply with College rules and regulations or official notices, conduct unbecoming a student.

Action leading to the requested withdrawal of a student can be taken up by the Executive Committee. However, any student may petition his department staff to waive the academic requirements of the College leading to dismissal; such petitions are acted upon by administrative officers of the College upon their presentation by the department concerned. The College reserves the right to be the sole judge in all matters pertaining to dismissal.

Students who are dismissed from the College will not be permitted to enroll in the day school term immediately subsequent to the dismissal action.

Withdrawal from Courses or from the College

From Courses: Counseling with a student's department chairman (or designee) is required prior to a student's withdrawal from a course. The chairman's signature is evidence of such counseling, since permission is not required. Re-enrollment in any course will be on a space-available basis.

From the College: A student withdrawing from the College must immediately notify the Student Personnel Office and complete the proper termination forms. Failure to comply with this regulation may cause the individual to forfeit the right to honorable dismissal and to lose any refund of fees.

The Student Personnel Office will not permit a student's withdrawal papers to be completed without making every reasonable effort to insure that the student has reviewed the matter with his department chairman (or designee).

Recording of Grades: The following procedure will be used to record grades for students withdrawing from a course or from the College:

No grade if withdrawn within the first two weeks of the term, "W" grade if after the second week and before the end of the seventh, "WF" or "WP" if after the seventh week and before the end of the ninth. After nine weeks, the grade will be that recorded by the instructor (A, B, C, D, P, F, I, WP or WF).

Attendance Regulations

Attendance in all scheduled course activities is expected as part of each student's responsibility for his or her own education. The basic policy of the College is that the student's academic achievement will determine grades and not the bare statistics of presence or absence.

Student Responsibility: Each student is responsible for any work missed regardless of the reason for any absence.

Instructor Responsibility: Each instructor is responsible for relating the significance of attendance to the course's objectives and to inform the students of this significance in the first class meeting. A student will be reported to the dean of students' office for consultation when excessive absences appear to be affecting success in a course.

Department Responsibility: Within the spirit and framework of college policy, each department may develop its own guidelines to meet its needs. Such guidelines are subject to the approval of the division director.

Repeating Courses

A student who wishes to repeat courses already taken at Broome must secure permission from the department chairman or advisor and should ask that the college policy on repeating courses be explained.

All courses in which a student registers will be shown on the permanent record subject to the conditions of the withdrawal policy. Thus if a student repeats a course, both enrollments and both grades will appear. When a student repeats a course, the most recent grades and honor points earned will be used to determine term and cumulative averages.

Auditing Courses

College policy does not permit registration for the purpose of "auditing" courses.

Instructional Problems

Students who feel that instructional programs or teaching techniques in their classes can be improved are welcome to discuss this with their instructors. Such considerations as quality, standards and effectiveness of the course are matters that concern both the College and the student.

If the matter cannot be resolved in the discussion between the student and instructor, the student can then request a meeting with the chairman of either his or her department or the instructor's or perhaps with both of them. Any of the parties may request that the dean of instruction be informed of the discussions.

Late Registration

An applicant may not register later than one week after the beginning of the fall term except by permission of the Dean of the College.

Length of Curriculum

All associate degree programs are two years in length. The college year is divided into four quarters or terms of approximately 10 weeks each plus an examination week. Radiologic Technology students must take courses during two summers, and Medical Laboratory Technology students must complete two quarters of clinical laboratory experience. Students in the other curriculums spend three quarters on campus each year, with their summer vacation coming in the fourth quarter.

Transfer to 4-Year Colleges and Universities

Students desiring to transfer are encouraged to consult with their faculty advisor, department chairman or a counselor in the Counseling Center for assistance in selecting colleges that are appropriate for their goals and demonstrated college achievement.

Broome Community College will not as a general rule encourage students who have less than a C (2.0) average to transfer to other colleges.

An applicant for transfer who will not complete the requirements for the associate degree at Broome Community College prior to the time of anticipated transfer may not be recommended for transfer, if the faculty of the College feels the applicant has not completed a desirable breadth or depth of study to provide suitable criteria for measuring academic ability.

The following procedures are to be observed by students desiring transfer:

1. Initiate the application to transfer. Application forms for colleges in the State University of New York are available in the Counseling Center at Broome Community College. Students should apply directly to all private and out-of-town four-year colleges, and applications should be submitted during November and December of the second year at Broome. After these dates the application may be deferred or returned due to lack of space.
2. Fill out Section I (in duplicate) of the Transfer Record Form in the Counseling Center. Students in Liberal Arts and Sciences, Engineering Science and the Business Administration curriculums will be requested to complete the Transfer Record Form regardless of their intention to transfer immediately upon graduation from Broome.
3. Complete a Request For Transfer of Academic Record Form in the Counseling Center or Student Personnel Office for each college to which they are applying.
4. Forward request for references or recommendation forms from other colleges to the Counseling Center.
5. Report acceptances and rejections from all colleges to the Counseling Center.

Please review these procedures carefully. Omission of any step may result in a delay of records being forwarded to another college. Any questions regarding the above procedure may be answered in the Counseling Center.

FINANCIAL AID

The College has a financial aids brochure with more detailed information than appears here. This brochure is available from the College financial aids office in the Administration Building.

More and more financial aid is becoming available for young people seeking a college education, with the result that fewer men and women are being denied the advantages of higher education because of the costs.

Financial aid at Broome Community College falls into three broad categories—awards, loans and part-time work. The awards are scholarships and grants that do not have to be repaid; the loans must be paid back but the repayment plans are lenient and the interest rates low; part-time work is arranged through the College and coordinated with the students's academic schedule.

The College is affiliated with the College Scholarship Service (CSS) of the College Entrance Examination Board. Participants in CSS subscribe to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists colleges and universities by analyzing the student's need for financial assistance.

Entering students seeking scholarship assistance are required to submit a copy of the Parents' Confidential Statement (PCS) form by April 15 to the College Scholarship Service, designating Broome Community College as one of the recipients. The PCS form may be obtained from the College, a secondary school or the College Scholarship Service, P. O. Box 176, Princeton, New Jersey 08540.

THE BROOME COMMUNITY COLLEGE FOUNDATION

The College has established this Foundation to help students overcome economic barriers to higher education. It has established a Scholarship Fund by enlisting the cooperation of industries, organizations and individuals in the community. Their contributions are administered by the Foundation to assist needy and qualified students. During the 1972-73 college year, the Foundation awarded more than $40,000 to 109 students.

The Foundation also collects and distributes funds to aid in the improvement and growth of faculty capabilities, thus enabling faculty members of the College to take graduate work and to attend seminars, workshops and conferences in their fields.

AWARDS

Scholar Incentive Awards

Many students attending Broome Community College who are New York State residents are eligible for a Scholar Incentive Award. This award is a direct grant payable to the student each term, and it may range between $100 and $400 depending upon the net taxable income of the student's family.

It is the individual student's responsibility to obtain and complete the necessary application forms. These may be obtained from the financial aids office in the Administration Building or from the University of the State of New York, the State Education Department, Regents Examination and Scholarship Center, Albany, New York 12224. For fall term benefits, it is recommended that applications be filed before mid-August. Applications will be accepted after that, but students should heed the mid-August date to avoid delays in receiving Scholar Incentive Award checks. Students must apply once a year.

Students who are eligible for these awards must pay full tuition upon registering. Their award checks will be remitted to the student by the Finance Office when received from the state. The Award Certificate sent to each student from Albany is not acceptable as a credit toward tuition.

Details are available from the financial aids office in the Administration Building.

New York State Regents Scholarships

Recipients of New York State Regents Scholarships may use them at the College, although the Regents Scholarship for Engineering and Scientific Studies is applicable only to the Engineering Science program. Regents Scholarships are applied toward tuition.

Federal Government Grants

Service veterans with at least six months of active duty since January 31, 1955 are eligible to receive at least $200 a month (more if they have dependents) for full-time study from the Federal government. Beneficiaries of this financial aid should be aware that they will probably not receive their first monthly payment until about two months after the start of the fall quarter. Inquiries and certificates of eligibility should be directed to the director of records and scheduling in the Administration Building.

Other Federal grants may be available. Check with the Financial Aids Office in the Administration Building.

LOANS

The two major sources of loan funds available to students of the College are the New York State Higher Education Assistance Corp. (also known as the Guaranteed Loan Program) and the National Direct Student Loan Program. Both provide long-term loans to students demonstrating financial need. Repayment of principal or interest for either type loan is not required until the student ceases his full-time college career.

Limited loan funds are available, too, for Broome County residents through the Parker Foundation. The College, moreover, is participating in the Federal Nursing Student Program.

WORK OPPORTUNITIES

College Work-Study Program

The College Work-Study Program is available to all students who demonstrate financial need as defined by the Federal Government. Special emphasis is directed to students from low income families.

Work assignments vary within the College and include work in maintenance, laboratories and offices. The prevailing student wage for campus jobs is paid. During the normal school year, work assignments are limited to 15 hours per week and during the summer 40 hours per week.

Part-Time Jobs

Part-time work is also available at times throughout the academic year, aside from the College Work-Study Program. These jobs are off-campus, and students desiring work should consult the bulletin board in the financial aids office in the Administration Building.

ABOUT BROOME COMMUNITY COLLEGE

THE COLLEGE

Broome Community College is a comprehensive two-year college. It has programs designed to prepare graduates both for immediate employment and for transfer to four-year colleges and universities at the junior, or third-year, level.

In addition to its daytime enrollment, which numbered more than 2,300 last year, the College has a Continuing Education Division which had more than 1,700 part-time evening students in the fall of 1972 and about 1,200 taking courses during the 1972 Summer Session.

The College is co-educational, publicly-supported, and has historically attracted about two-thirds of its student body from Broome County and one-third from outside the county. The ratio has recently become closer to 80% and 20%.

The day student body can be classified into four parts, based on study objectives—university-parallel or transfer programs, the business program, engineering and engineering technology curriculums, and health science courses.

The College is sponsored by Broome County, supervised by the State University of New York, and accredited by both professional and educational organizations (See inside front cover).

THE CAMPUS

The College campus is located three miles north of Binghamton on Upper Front Street, which is Route 11 and Route 12 at this point running alongside of Interstate 81. Nine of the 11 buildings form two contiguous quadrangles to make a compact campus layout.

Most of the buildings are two stories high, of modern functional design, and made of brick with colored panel-wall facing. They lie in a suburban setting in the virtual center of the College's 120 acres of land.

In addition to classrooms and laboratories, the campus has its own cafeteria, gymnasium and athletic field, and a Little Theater. These facilities add up to make the campus a $9,000,000 investment in the youth of Broome and surrounding counties.

THE COMMUNITY

The community is an industrial and agricultural area in New York State's Southern Tier. It is in the approximate center of the state, measuring from east to west, and its southern extremity touches the Pennsylvania state line.

Binghamton is the principal city in Broome County, but it is only a part of the community known as the Triple Cities. Endicott and Johnson City are the other two cities, but Vestal and other suburbs help to make the community much larger in population and geography than the city of Binghamton.

Binghamton has a population of 64,123, yet the Triple Cities area embraces 155,522 people. The population of Broome County is 221,815. Diversified industry in the community includes such firms as IBM, General Electric, Singer Co. (formerly Link), GAF, New York State Electric & Gas Corp. and Endicott Johnson.

The College has become an integral part of the community since it was started in 1947. Many of the campus facilities are offered without charge for use by responsible organizations, and most of the College's curriculums are designed to help fill the economic needs of the county.

EXPANSION

A new Health Sciences Center is planned for the campus, and $5.13 million has been approved by the State University of New York and included in its capital construction budget for this building, which is included in the College's Master Plan. The plans call for a tentative completion in 1975.

HISTORY

The College graduated its first class in 1949. These students had entered what was then known as the New York State Institute of Applied Arts and Sciences at Binghamton in the fall of 1947. The original institute was one of five founded in the state in 1946, following the pattern of six agricultural and technical institutes which New York had established earlier in the century. The first programs offered were all occupational in nature and included Chemical, Electrical and Mechanical Technologies, as well as Medical Office and Technical Office Assistant courses.

In 1953 New York relinquished operating control of the school to a new sponsor, the County of Broome, under provisions of the newly-enacted State Community College Law, and the name was changed to Broome County Technical Institute. In 1956 the name was again changed, to Broome Technical Community College, to reflect the increasingly comprehensive nature of the educational offerings. In 1971 the name became Broome Community College as the scope of the curriculums continued to expand.

In keeping with the comprehensive objectives of this community college, a university-parallel curriculum was instituted in the Engineering Sciences in 1959, a two-year program of Liberal Arts and Sciences started in the fall of 1962, and a transfer program in Business Administration begun in 1963.

X-Ray Technology was added in 1965, Medical Laboratory Technology in 1966, Nursing and Environmental Health Technology a year later, and Medical Record Technology in 1969.

For its first five years, the school was housed in a refurbished State Guard armory in downtown Binghamton. This building was gutted by fire in September of 1951, and for the next five years Kalurah Temple and two other buildings in the city provided temporary quarters. In 1957 the college moved to its present campus on the north side of Binghamton on Route 11. The first addition to the original campus came with the construction of Titchener Hall, which was dedicated on May 17, 1963. A temporary classroom building was added in 1966, the Library Building built a year later, and the new Business Building opened in 1972.

CONVOCATIONS

Speakers in a diversity of fields are brought to the campus during the school year as part of the College's convocation program. These convocations are considered a phase of the academic curriculum, although they are scheduled apart from the regular classroom program.

Such nationally known figures as Dr. Henry Kissinger, President Nixon's top advisor for foreign policy; consumer crusader Ralph Nader; James Farmer, former director of CORE; syndicated advice columnist Ann Landers, civil rights leader Julian Bond and anthropologist Margaret Mead have spoken at convocations.

Other noted speakers who have been here for convocations include television writer Rod Serling, the late Norman Thomas, James Meredith, author Vance Packard and TV commentator Heywood Hale Broun.

COUNSELING CENTER

A Counseling Center with five full-time counselors is available to help students adjust to college life and to solve problems that develop. The four main areas are academic, transfer, career and social counseling. The center is on the second floor of the Administration Building.

FACULTY-STUDENT ASSOCIATION

The Faculty-Student Association of Broome Community College, Inc., is an educational corporation designed to provide to the College, and particularly to the students and faculty, services that are not provided for in the regular College budget.

It provides the corporate organization through which the student fees are expended under a budget prepared by the Student Senate and such other organizations as the Athletic Board of Control and the Convocation Committee. It also operates the College Bookstore and cafeteria.

Through the modest earnings of the Bookstore the income from student fees is augmented to support new or special activities.

The association is governed by a board of directors elected by members who hold certain offices on campus.

The operating philosophy is to make the educational program outside of the classroom a well-rounded supplement to the academic experience of the student.

JOB PLACEMENT

Many companies send representatives to the campus each spring to interview seniors about jobs immediately after graduation. This practice has grown to the point where between 25 and 75 concerns conducted job interviews in each of the last few years.

Leading national corporations, as well as many local companies, have been among those interested in Broome CC graduates. The list includes such major area employers as International Business Machines, New York State Electric & Gas Corp., Singer Co. (formerly Link), GAF and practically all the banks in Broome County.

Such firms as Eastman Kodak, Xerox, DuPont, Union Carbide, National Cash Register, Sun Oil Co., and Corning Glass represented the national scene.

The job interviews are especially directed toward the students in the occupationally-oriented Business program and the Electrical, Mechanical, Civil, Chemical and Medical Laboratory Technology curriculums.

In cooperation with the department chairmen, the Student Personnel Office coordinates permanent placement, including employment listings and appointments for interviews.

LEARNING CENTER

The College is committed to the learning center concept of individualized instruction. Several curriculums have developed program units to permit students to study at their own pace and own convenience, using program material prepared by their own instructors.

Some 50 carrels using audio and visual devices comprise the Learning Center facilities on campus. The Learning Center, however, should be regarded more as a concept of learning than as a physical center or equipment. The physical facilities are only the means to the end, which is learning.

CAMPUS CARILLON

The College has a Maas-Rowe symphonic carillon, which tolls the hours with the Westminster chimes. Periodic concerts are played either by individuals or by the automatic music roll feature. The carillon was a gift to the College, donated by former trustee Dr. Leopold Eckler and the college foundation.

THE CECIL C. TYRRELL LIBRARY

The Cecil C. Tyrrell Library, named for the College's founding president, has a capacity of 900 readers and 75,000 volumes. Since 1947 the Library has developed one of the most complete collections of technical works in the Southern Tier, consisting of about 39,000 books, pamphlets and government documents. Additions are currently in such areas as liberal arts, business, health sciences and police science to reflect the College's broadened scope of curriculum offerings.

Extensive files of periodicals and journals, recordings and prints of well-known paintings are also included in the library's holdings.

Part of the library's purpose is to stimulate intellectual curiosity, to promote independent research, and to provide leisure-time reading facilities for students and faculty.

The Library is open evenings during the college year and therefore is also available for evening division students. There are also library hours on Saturday mornings and Sundays in the late afternoon and evening.

STUDENT CENTER

The busiest and most versatile building on the Broome Community College campus is the Student Center. It houses the gymnasium, the College Cafeteria, Bookstore, and the Little Theater. This building is used by day and evening students of all curriculums.

ALUMNI

Transcripts

Each graduate is entitled to two transcripts of work completed at the College. One dollar is charged for each additional transcript.

Alumni Association

All students of the College may become paid-up lifetime members of the Broome Community College Alumni Association, which is a non-profit corporate organization.

The association has its own officers and board of directors and its primary purpose is to provide a link between the College and its graduates. An Alumni Newsletter helps to accomplish this objective by supplying alumni with periodic news of the College, as well as information about the Association and other graduates.

The Alumni Association supports the College's Scholarship program and conducts events for its members throughout the year, such as the annual Alumni Dinner-Dance.

CO-CURRICULAR ACTIVITIES

The College recognizes the fact that student experiences outside the classroom are important in one's over-all development. For this reason the College supports an active co-curricular program as a complement to classroom studies. The variety of activities on the campus reflects the diversification of student interest and provides the opportunity for students to develop talents, leadership ability and a sense of social responsibility.

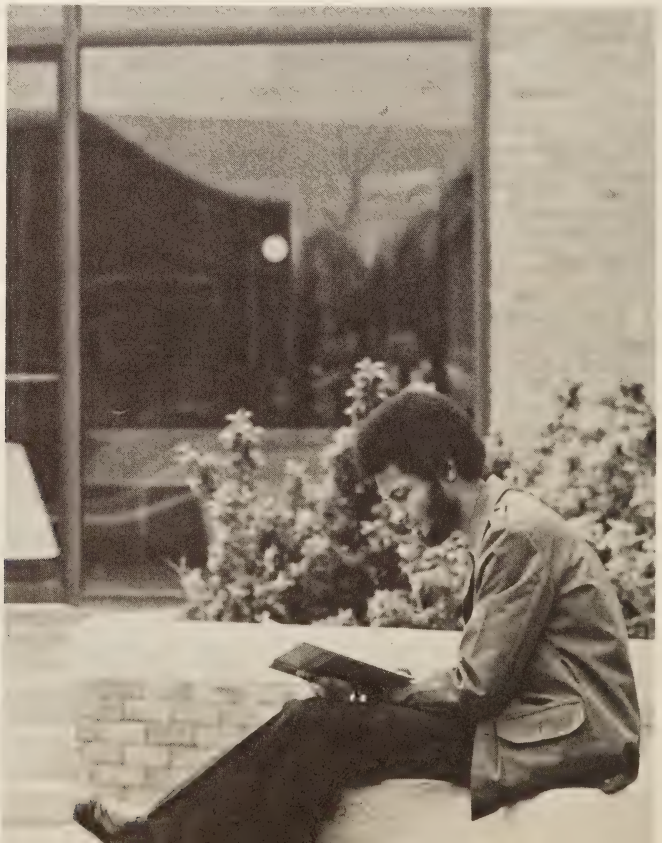
Co-curricular activities are guided by two faculty-student committees—the Student Activity Board of Control for the College's non-athletic program and the Athletic Board of Control for sports.

Student Senate

The Student Senate, the governing body in student affairs, is the heart of the co-curricular activity program. The officers, elected from the student body, and the representatives from the various curriculums promote and co-ordinate the student activities. The Social Committee is one of the important Student Senate committees, as it is responsible for the extensive social program of the Senate.

Music

The College has a fine history of student-singing organizations, such as the College Choir for men and women. These musical organizations have sung frequently at State University of New York choral festivals, as well as for local church and civic organizations. All students, as well as faculty and staff, are welcome to sing in the choir.



HONOR SOCIETIES

Phi Theta Kappa

In 1962 the Mu Eta chapter of Phi Theta Kappa was established at the College. Phi Theta Kappa is a national honor society at junior colleges, similar in purpose to Phi Beta Kappa at the four-year colleges and universities. Mu Eta chapter is open to freshmen and seniors at Broome CC who have achieved outstanding academic grades, been especially active in co-curricular participation, demonstrated outstanding qualities of leadership and responsibility, and made noteworthy contributions to the College.

Sigma Phi Alpha

The national dental hygiene honor society, Sigma Phi Alpha, has a chapter at Broome CC, the Upsilon chapter. Senior Dental Hygiene students who rank highest in scholarship and character and who exhibit potential qualities for future growth and attainment are selected for membership.

Publications

The Fulcrum is the campus newspaper and the **Citadel** is the College yearbook. Positions on both publications are open to all students.

The Fulcrum's purpose is to report news of the campus, student body and faculty. It also provides a place for students to express their ideas about campus activities and about events related to college life.

The Citadel provides a record, mostly pictorial, of the school year.

Professional Society Affiliates

Since exposure to organizations in their fields of study is considered of benefit to students, many curriculums have their own affiliates of national professional societies. Among these are:

SME, the Society of Manufacturing Engineers, for Mechanical Technology students.

A college chapter of the Administrative Management Society, mainly for Business students although all are welcome.

Civil Technology Association, which aims to pursue in greater depth than the classroom permits the many phases of the field.

Dental Hygiene Association, an affiliate of the American Dental Hygiene Association.

Broome CC Chapter Future Secretaries Association, affiliated with the National Secretaries Association (International) Binghamton Chapter.

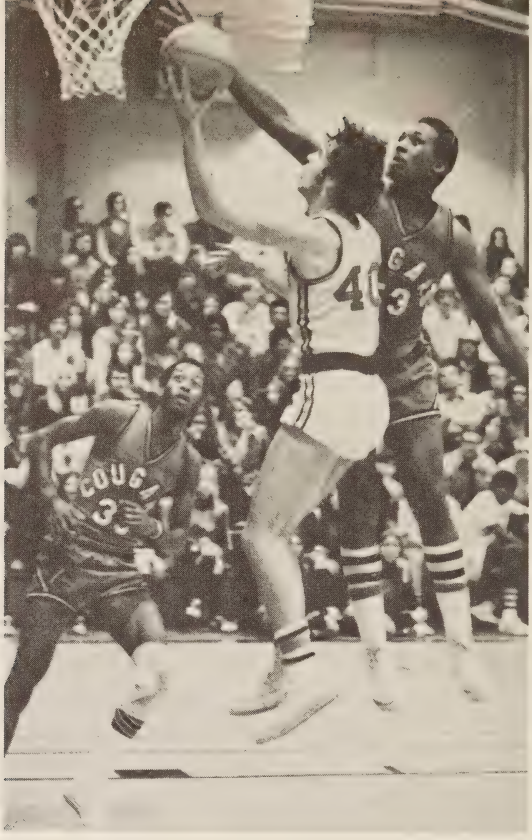
IEEE, the Institute of Electrical and Electronics Engineers, for Electrical Technology students.

Medical Assistants Association, which is designed to give members a closer look at their field, as well as supply them with some social relaxation.

In addition, some meetings of local professional societies are attended by students, as the American Chemical Society invites Chemical Technology students to its meetings. Some professional societies hold meetings on campus, too, and students are always welcome to attend. Thus students have the opportunity to become acquainted with professional people in their fields of study and to attend lectures and see films and demonstrations of new developments.

Other Clubs

In addition to the co-curricular activities already listed, other organizations are active on campus, such as the Art Club, Camera Club, Circle K, Sigma Epsilon Chi, Outing Club, Riding Club, Rifle Club, Ski Club, Social Activities Committee, the cheerleaders and the student dramatic group. All are open to all students in good standing. Details on the purposes and requirements for membership in all clubs are available in the Student Handbook.



ATHLETICS

Varsity Sports

Broome Community College fields varsity teams in seven sports—basketball, soccer, baseball, cross-country, golf, tennis and wrestling—and has acquired an excellent reputation for team play and sportsmanship.

The basketball team has captured the regional junior college title in nine of the last 17 years and has won 589 games and lost 163 for a .783 percentage. The tennis team enjoyed four consecutive undefeated seasons (in dual competition) from 1969 through 1972 and won three successive regional championships. The baseball team has won two regional tournaments. The cross-country, golf and soccer squads have also been regional powers in the past.

Intramural Sports

All students may participate in intramural sports. Men's teams representing the various curriculums compete for the coveted President's Trophy, awarded annually to the one acquiring the most points in a variety of activities. League competition is conducted in flag football, basketball, volleyball, soccer and softball, while students also compete in individual sports such as golf, badminton, archery, tennis, cross-country and bowling.

Archery, skiing and co-educational bowling clubs offer additional opportunity for participation in recreational activities, although they do not count in President's Trophy competition.

Women's Sports

The College also has a varied sports program for women students. In addition to the Physical Education classes, there is intercollegiate and intramural competition.

Intramurals are contested in volleyball, badminton, tennis, archery, basketball, softball and bowling.

HONOR AWARDS

American Chemical Society (Binghamton Section) Award of $50 to the outstanding senior in chemistry.

American Society for Testing and Materials (Binghamton Chapter) Award of a one-year membership in the society to a Mechanical or Civil Technology senior who has shown superior scholastic ability and an interest in testing or in materials.

Binghamton Chapter, New York State Society of Certified Public Accountants Silver Award of a silver tie pin to the outstanding accounting student who is planning to continue his or her accounting career at a four-year college or university.

Broome County Chamber of Commerce Award of an engraved certificate to two seniors (a man and a woman) for leadership in co-curricular activities and for satisfactory academic achievement.

Broome County Medical Society Scholarship Award of $200 to a Medical Office Assistant student who is a Broome County resident, has successfully completed her freshman year with a high academic standing and has shown leadership ability. Future potential and employment within the county are also considerations.

Broome County Women's Republican Award of $25 to an outstanding student in history.

Collegiate Administrative Management Society Chapter Award of five inscribed pewter bowls to the outstanding students, academically, in each of the five options of the Business Division.

Colonial TV Award of a $25 gift certificate to an Electrical Technology senior who has shown outstanding ability in laboratory work.

French Embassy Awards to the six best French language students. Donated by the French Embassy.

U.S. Greene Mathematics Award of $50 to a senior for showing a high degree of ability and progress in mathematics.

Institute of Electrical and Electronics Engineers (IEEE) Award of $50 from the Binghamton Section of IEEE to an Electrical Technology senior who has shown outstanding ability and leadership in the IEEE chapter. The student, who must be in the top quarter of his graduating class, will also receive an IEEE certificate from the national office.

International Material Management Society (Southern Tier Chapter) Award of $75 to a Mechanical Technology senior who has demonstrated an interest in material handling, mechanical engineering or industrial engineering and who plans to make a career of one of these fields.

Ladies Auxiliary of the Broome County Area Chapter of the New York State Society of Professional Engineers Award of a $100 scholarship to an Engineering Science senior who has shown a high degree of engineering ability. Financial need is a factor in selecting this recipient.

New York State Medical Record Association Award of a government bond to a senior Medical Record Technology student showing outstanding ability, leadership and interest in the field. The amount of the bond is determined by the association.

Sales and Marketing Executive Club of the Southern Tier Award of a $200 scholarship for one person or $100 each to two freshman students in the marketing program on the basis of need and academic performance. Recipient must be a Broome County resident.

Society of Mechanical Engineers Award of the Tool Engineers Handbook to a senior in the student SME Chapter who has contributed outstanding service.

Stevenson Medal, given by the New York State Dental Society, to the Dental Hygiene student who possesses in the highest degree the qualities considered necessary for success in this work, such as theory, technique and personality.

Upsilon Chapter of Sigma Phi Alpha (National Dental Hygiene Honor Society) Award of membership in the chapter. Limited to the top 10 percent of the Dental Hygiene graduates who rank highest in scholarship and character.

William E. Wilson Memorial Award to a Civil Technology senior for academic achievement and citizenship.

DIVISION OF CONTINUING EDUCATION

Evening credit courses lead to various evening diploma programs (32 semester credit hours) in Business; Chemical, Civil, Electrical, and Mechanical Technologies; Police Science, Computer Studies and Production Management; as well as General Studies). These diplomas are the bases of required study for the Associate in Applied Science Degrees in Business, Industrial Technology and Police Science and for the Associate in Arts degree. The evening terms are tentatively set to begin September 10, 1973 and January 28, 1974.

Responding to special interests and community needs, Broome Community College has instituted the Resource Development Programs (RDP). These are "mini-courses" of three and six weekly sessions each with no homework, no exams, no grades.

Catalogs of courses and programs are available from the Division of Continuing Education.

judgment, he or she has the ability to do college-level classwork and the necessary prerequisites for the course. Full details about these programs are contained in the catalog available on request from the College's Division of Continuing Education. Call 772-5012.

Evening and Saturday Credit Session

Evening credit courses lead to various evening diploma programs (32 semester credit hours in Business; Chemical, Civil, Electrical, and Mechanical Technologies; Police Science, Computer Studies and Production Management; as well as General Studies). These diplomas are the bases of required study for the Associate in Applied Science Degrees in Business, Industrial Technology and Police Science and for the Associate in Arts degree. The evening terms are tentatively set to begin September 10, 1973 and January 28, 1974.

Responding to special interests and community needs, Broome Community College has instituted the Resource Development Programs (RDP). These are "mini-courses" of three and six weekly sessions each with no homework, no exams, no grades.

Catalogs of courses and programs are available from the Division of Continuing Education.

Part-Time Students

Enrollment as part-time day students will be on a strict space-available basis. Registration will be conducted by the Division of Continuing Education and generally will be held a day or so prior to the first day of the term at 8 a.m. in the Student Center. Late registration will be accepted only during the first five class days of the term.

Individuals may register for part-time day enrollment for a maximum of 6 credit hours or two courses by applying in person at registration. Only in exceptional circumstances will applicants be permitted to enroll for a maximum of 12 term credit hours, subject to the approval of the Admissions Committee of the College. Broome Community College graduates, however, need only have prior approval from the department chairman.

A part-time day student will not be permitted to enroll in the subsequent day term if in day courses he or she has received two "F" grades, two "P" grades, or a "P" and an "F" grade in one day term or in two consecutive day terms. Exceptions to this policy may be considered for unusual circumstances. In these cases students must petition in writing the dean of the Division of Continuing Education, who will make final determination.

Part-time students who withdraw from courses must complete the proper termination procedures at the Division of Continuing Education office.

All individuals admitted on other than a full-time basis will be subject to policies governing students in the Division of Continuing Education, in addition to regulations governing full-time students. Such enrollment does not automatically make the enrollee a candidate for an associate degree.

Summer Session

Summer credit courses, many of which can be accepted by other colleges for transfer, are available during the days and evenings. Developmental and college preparatory subjects are also available. Summer semesters are scheduled to start on June 25, 1973 and June 24, 1974. Summer Session catalogs may be obtained from the Division of Continuing Education.

Tuition and Fees for Part-Time Day Students

Residents of New York State will pay $14 per quarter credit hour as tuition for courses they enroll in. Out-of-state residents must pay $28. Out-of-county residents will need residency certificates. See page 8. Broome County residents may complete residency forms at registration.

There is also a student activity fee of $2 per term for each part-time student enrolled in day classes. This entitles these students to admission to convocations and to issues of the student newspaper. It does not, however, include admission to varsity sports events nor to copies of The Citadel, the College yearbook, or membership in student organizations. The student has the option, though, of paying $15 per term and receiving the same activity privileges as full-time students with the exception of receiving a copy of the College yearbook.

In no case should a student be charged more than the full-time student activity fee of $50 per academic year.

A fee of $15 is charged per term for part-time students taking 12 or more academic hours. This entitles the student to the same activity privileges as full-time students with the exception of receiving a copy of the College yearbook.

SPECIAL PROGRAMS

COLLEGIATE STUDIES CERTIFICATE PROGRAM

Students who either lack the minimum requirements for admission to the degree programs of the College, or those who have been out of school for several years, may request enrollment in the Collegiate Studies Certificate Program. This is a year-long sequence of study emphasizing the fundamental concepts of English, mathematics and science. Students in this program are considered regular college students. These students are eligible for all campus social events and co-curricular activities. At the end of the year, students are evaluated by the faculty and must be recommended for entrance to a degree program before being admitted in the subsequent year. This was formerly known as the Pre-Tech program.

DIPLOMA NURSING

Nurses in the diploma training program at Binghamton General Hospital take part of their first year of study at Broome Community College. Under this program these students may participate in all activities of the college except varsity athletics.

CURRICULUM OUTLINES

BUSINESS

The Business Division offers courses of study in five different options. These are Engineering Secretarial and Executive Secretarial, Accounting, Marketing Management and Business Administration. The first four are designed to prepare graduates for immediate employment, while the Business Administration option is for students planning to continue their education at a four-year college or university.

It is possible to transfer from all programs. But because each student's transfer credits are evaluated by the four-year institution, the number of credits accepted can vary. Any student planning to transfer should maintain a minimum 2.5 grade point average.

These programs were planned with the assistance of businessmen, accountants, administrative managers, controllers, auditors, sales managers, engineers and secretaries.

Employment in business and industry, as well as management training programs offered by banks, chain stores and insurance companies, provide some of the best opportunities for a graduate of the Accounting and Marketing Management options.

OCCUPATIONAL PROGRAMS

Engineering Secretary

Graduates of this option can obtain immediate employment as stenographers, secretaries or private secretaries. Students in this option study science and engineering terminology in addition to their business courses. Therefore, they can understand the specialized language of engineering and are well prepared to work on engineering reports, records and correspondence.

Executive Secretary

Graduates of this option can obtain immediate employment as stenographers, secretaries or private secretaries. Students in this option may elect courses from other fields of study in the College consistent with their interests and vocational goals. Therefore, they can understand the specialized language used in the professions, as well as in government and business firms.

Accounting

Students taking this option receive their training in such basic areas as intermediate accounting, cost accounting and internal auditing. Graduates have successfully taken positions in banks, industrial firms, public accounting and private business.

Marketing Management

Training is given in sales, advertising, management and research. Employment is generally found in sales of services, equipment, insurance, products at the wholesale level, and management training positions.

TRANSFER PROGRAM

Business Administration

The option is designed specifically to prepare graduates to continue their business studies at a four-year college or university. While offering maximum transfer potential toward a bachelor's degree in accounting or business administration, it still gives students preparation for employment if they decide to work instead of seeking their baccalaureate degrees.

Business Curriculums

1st YEAR

for curriculum options in

- **Accounting**
- **Business Administration**
- **Marketing Management**

			Hours Per Week		
Term 1			Class	Lab	Credits
BU	101	Accounting	4	0	4
BU	141	Business Mathematics	3	0	3
BU	145	Business Law	3	0	3
LA	255	Economics	3	0	3
LA	801	English	3	0	3
		*Mathematics or alternate course	3	0	3
			19	0	19
Term 2					
BU	102	Accounting	4	0	4
BU	146	Business Law	3	0	3
BU	151	Business English	3	0	3
BU	292	Marketing	3	0	3
LA	256	Economics	3	0	3
LA	802	English	3	0	3
			19	0	19
Term 3					
BU	103	Accounting	4	0	4
BU	130	Introduction to Electronic Data Processing	3	0	3
BU	142	**Business Statistics or MA 101 Mathematics	3	0	3
LA	257	Economics	3	0	3
LA	803	English	3	0	3
LA	804	**Effective Speaking or PH 101 Phys. Science	3-2	0-2	3
			19-18	0-2	19

*MA 100 Mathematics for students who did poorly in Elementary Algebra or who have been away from it more than four years. MA 101 Mathematics for students who have passed Elementary Algebra or MA 100 Mathematics. An alternate course will be chosen by the department for students who have passed Intermediate Algebra or Math 11 in secondary school, or MA 101 Mathematics.

**Students who choose the Business Administration option will take LA 804 Effective Speaking and those who passed MA 100 Mathematics in the first term must now take MA 101 Mathematics instead of BU 142 Business Statistics. Accounting and Marketing Management students will take BU 142 Business Statistics and PH 101 Physical Science.

Accounting Option

2nd YEAR

			Hours Per Week Class	Lab	Credits
Term 4					
BU	204	Intermediate Accounting	4	0	4
BU	207	Cost Accounting	4	0	4
BU	242	Computer Programming—COBOL	2	2	3
BU	252	Business Report Writing	3	0	3
BU	255	Principles of Management	3	0	3
			16	2	17
Term 5					
BU	205	Intermediate Accounting	4	0	4
BU	208	Cost Accounting	4	0	4
BU	253	Personnel Administration	3	0	3
LA	804	Effective Speaking	3	0	3
BU	212	Financial Information Systems	2	2	3
			16	2	17
Term 6					
BU	206	Intermediate Accounting	4	0	4
BU	210	Cost Accounting	4	0	4
BU	211	Accounting Seminar	4	0	4
BU	223	Internal Auditing	4	0	4
LA	810	Psychology	3	0	3
			19	0	19

Marketing Management Option

2nd YEAR

			Hours Per Week Class	Lab	Credits
Term 4					
BU	253	Personnel Administration	3	0	3
BU	255	Principles of Management	3	0	3
BU	287	Salesmanship	4	0	4
BU	298	Marketing	3	0	3
LA	804	Effective Speaking	3	0	3
			16	0	16
Term 5					
BU	252	*Business Report Writing	3	0	3
BU	288	Advertising	3	0	3
BU	289	Management: A Behavioral Approach	3	0	3
BU	296	Credit	3	0	3
LA	810	Psychology	3	0	3
			15	0	15
Term 6					
BU	221	*Computer Programming—Fortran	2	2	3
		or		or	
BU	300	Purchasing	3	0	3
BU	294	Advertising	4	0	4
BU	295	Marketing Research	3	0	3
BU	299	Retailing	3	0	3
LA	830	Sociology	3	0	3
			15-16	2-0	16

*Some of Marketing students scheduled in Term 5 and some in Term 6.

Business Administration Option

2nd YEAR

			Hours Per Week Class	Lab	Credits
Term 4					
BU	204	***Intermediate Accounting or BU 221 Computer Programming—Fortran	4-2	0-2	4-3
BU	207	***Cost Accounting or Liberal Arts Elective	4-3	0	4-3
LA	145	Development of Western Civilization or LA 148 U.S. History	3	0	3
MA	120	Finite Mathematics for Business	3	0	3
PH	113	Physical Science	3	2	4
			17-14	2-4	18-16
Term 5					
BU	205	***Intermediate Acctg. or BU 255 Principles of Management	4-3	0	4-3
BU	208	***Cost Accounting or Liberal Arts elective	4-3	0	4-3
LA	146	Development of Western Civilization or LA 149 U.S. History	3	0	3
MA	121	Finite Mathematics for Business	3	0	3
PH	114	Physical Science	3	2	4
			17-15	2	18-16
Term 6					
BU	206	***Intermediate Accounting or BU 289 Management: A Behavorial Approach	4-3	0	4-3
BU	210	***Cost Accounting or Liberal Arts elective	4-3	0	4-3
LA	147	Development of Western Civilization or LA 150 U.S. History	3	0	3
MA	122	Introduction to Calculus for Business	3	0	3
PH	115	Physical Science	3	2	4
			17-15	2	18-16

***Student's choice must consist of three-term sequences.

Marketing students making a sales presentation, which is being videotaped by two cameras in the background.

SECRETARIAL SCIENCES

1st YEAR for curriculum options in

• Executive Secretary • Engineering Secretary

				Hours Per Week Class	Lab	Credits
Term 1						
BU	101		Accounting	4	0	4
BU	141		Business Mathematics	3	0	3
BU	161	or	BU 162 *Typewriting	0	5	2
BU	164		**Shorthand or Alternate	2-3	3-0	3
LA	801		English	3	0	3
				12-13	8-5	15
Term 2						
BU	102		Accounting	4	0	4
BU	162	or	BU 163 Typewriting	0-2	5-3	2-3
BU	165		Shorthand	2	3	3
BU	167		Transcription	2	3	3
LA	802		English	3	0	3
PH	101		Physical Science	2	2	3
				13-15	13-11	18-19
Term 3						
BU	103		Accounting	4	0	4
BU	163		Typewriting or BU 312 Secretarial Procedures	2-3	3-0	3
BU	166		Shorthand	2	3	3
LA	803		English	3	0	3
MA	105		Mathematics	3	0	3
PH	102		Physical Science (Engineering Secretary)	2	2	3
			or		or	
BU	151		Business English (Executive Secretary)	3	0	3
				16-18	8-3	19

*If a student has had previous training in typewriting, a test will be given to her or him during the first week of the term. Depending on performance, the student will be assigned to BU 161 Typewriting or BU 162 Typewriting.

**If a student has earned a Regents unit in Shorthand II and Transcription of 80% or better, an alternate course chosen by the department will be assigned.

2nd YEAR
Engineering Secretary Option

			Hours Per Week		
Term 4			Class	Lab	Credits
BU	130	Introduction to Electronic Data Processing	3	0	3
BU	147	Business Law	3	0	3
BU	151	Business English	3	0	3
BU	253	Personnel Administration	3	0	3
BU	260	Engineering Shorthand	2	3	3
CH	104	Chemistry	3	2	4
			17	5	19
Term 5					
BU	261	Engineering Shorthand	2	3	3
BU	263	Technical Typewriting	2	3	3
BU	310	Office Practice	0	4	2
BU	312	†Secretarial Procedures	3	0	3
LA	804	Effective Speaking	3	0	3
MT	128	Survey of Engineering Laboratories	2	3	3
			12	13	17
Term 6					
BU	280	Speed Shorthand	2	3	3
BU	311	Office Practice	0	4	2
BU	313	Secretarial Procedures	2	0	2
LA	810	Psychology	3	0	3
LA	820	Economics	3	0	3
		Elective	3	0	3
			13	7	16

Executive Secretary Option

Term 4					
BU	147	Business Law	3	0	3
BU	253	Personnel Administration	3	0	3
BU	270	Executive Shorthand	2	3	3
LA	255	Economics	3	0	3
LA	810	Psychology	3	0	3
		*Elective	3-4	0-1	3-4
			17-18	3-4	18-19
Term 5					
BU	271	Executive Shorthand	2	3	3
BU	310	Office Practice	0	4	2
BU	312	†Secretarial Procedures	3	0	3
LA	256	Economics	3	0	3
LA	804	Effective Speaking	3	0	3
		*Elective	3-4	0-1	3-4
			14-15	7-8	17-18
Term 6					
BU	130	Introduction to Electronic Data Processing	3	0	3
BU	311	Office Practice	0	4	2
BU	313	Secretarial Procedures	2	0	2
BU	280	Speed Shorthand	2	3	3
LA	257	Economics	3	0	3
		*Elective	3-4	0-1	3-4
			13-14	7-8	16-17

†If a student has satisfactorily completed BU 312 Secretarial Procedures in Term 3, she or he will be assigned an alternate course.

*Students can elect a foreign language.

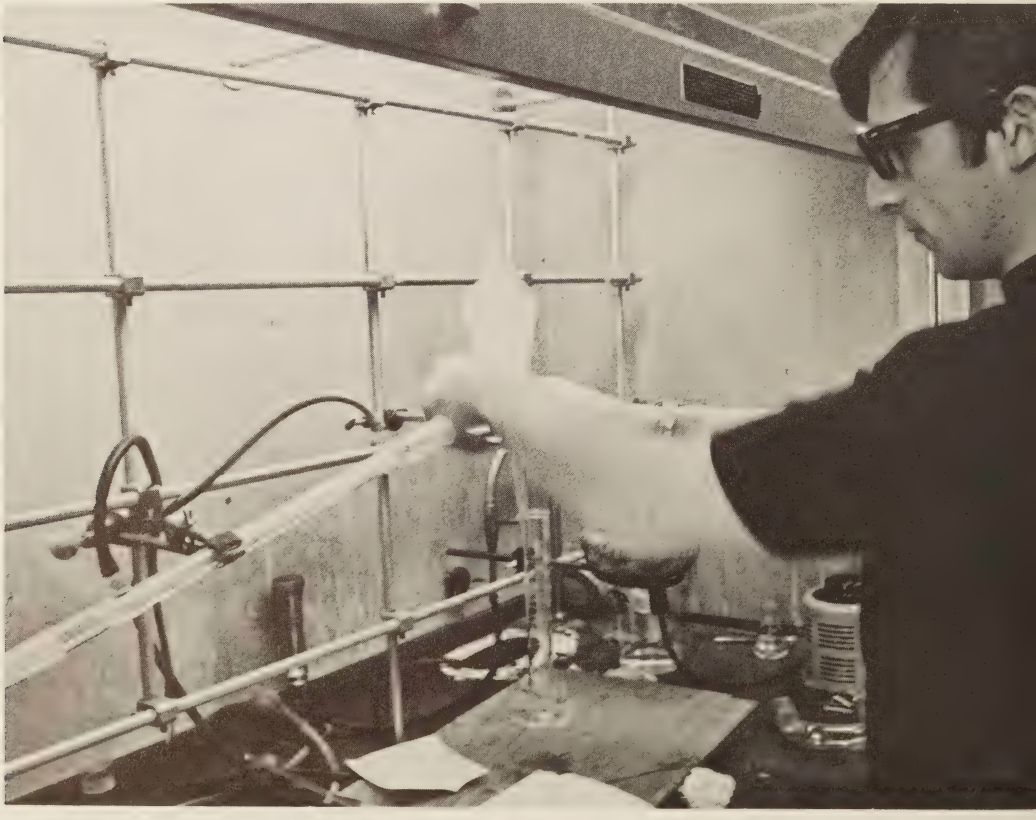
CHEMICAL TECHNOLOGY

The Chemical Technology curriculum is designed to provide a background which will lead to gainful employment. Chemical technicians of both sexes have filled a vital manpower need in companies and organizations where background in various areas of chemistry is necessary or desirable. The expansion of products and uses of chemistry require chemical technicians to perform much essential work.

Employers of chemical technicians include IBM, GAF, Eastman Kodak, Allied Chemical Corp., DuPont, Norwich Pharmacal Corp., GE, American Cyanamid, Union Carbide, Bristol Laboratories, Warner-Lambert, government agencies, hospitals and educational institutions.

Entry positions are usually in some type of laboratory. The laboratory may be a research, development, process or quality control, or an analytical lab, or in a pilot plant. In these positions a chemical technician may work for a senior staff member or be a member of a group working in a particular area. Experienced chemical technicians have become supervisors, group leaders, technical salesmen and servicemen. Many have progressed far enough to work independently and have acquired professional status.

Chemical Technology student performing an experiment in the Organic Chemistry Laboratory.



Chemical Technology

1st Year

			Hours Per Week Class	Lab	Credits
Term 1					
CH	121	Chemistry	3	3	4
MA	140	College Algebra and Trigonometry	4	0	4
		or		or	
MA	150	Principles of Mathematics	4	0	4
		or		or	
CS	110	Elements of Technical Mathematics	5	0	5
LA	801	English	3	0	3
PH	143	Physics (Mechanics)	3	2	4
		or		or	
LA		Elective	3	0	3
AD	100	Orientation	1	0	0
			14-15	3-5	15-16
Term 2					
CH	122	Chemistry	3	3	4
MA	141	Calculus	3	0	3
		or		or	
MA	151	Principles of Mathematics	4	0	4
		or		or	
CS	111	Elements of Technical Mathematics	5	0	5
LA	802	English	3	0	3
PH	144	Physics (Mechanics, Heat, Sound, Light)	4	2	5
		or		or	
PH	106	Physics	2	2	3
			13-14	5	15-16
Term 3					
CH	123	Chemistry	3	3	4
MA	142	Calculus	3	0	3
		or		or	
MA	152	Principles of Mathematics	4	0	4
		or		or	
CS	112	Elements of Technical Mathematics	5	0	5
LA	803	English	3	0	3
PH	145	Physics (Electricity and Magnetism)	3	2	4
		or		or	
PH	107	Physics	2	2	3
			12-13	5	14-15

Students' selection of the appropriate course in each option above must be approved by the department chairman and must be such as to give him either of the two credit totals listed for each term.

2nd YEAR

Term 4					
CH	220	Organic Chemistry	3	4	5
CH	228	Analytical Chemistry	3	4	5
CH	265	Chemical Processes	3	4	5
LA		Social Science Elective	3	0	3
			12	12	18
Term 5					
CH	221	Organic Chemistry	3	4	5
CH	226	Instrumental Analysis	2	6	5
CH	266	Chemical Processes	3	4	5
LA		Social Science Elective	3	0	3
			11	14	18
Term 6					
CH	222	Organic Chemistry	3	4	5
CH	227	Instrumental Analysis	2	6	5
CH	267	Chemical Processes	3	4	5
LA		Social Science Elective	3	0	3
			11	14	18

CIVIL TECHNOLOGY

The construction industry, considering all related goods and services such as manufacturing and transportation, is the largest industry in the country. The activity in construction has pointed up a shortage of technical personnel in this field. Civil Technology has been designed to help alleviate this shortage.

Graduates of this program begin their careers as engineering technicians and are qualified to work as assistants to professional and supervisory persons such as engineers, architects, construction superintendents, surveyors and contractors. Graduates may find employment in such fields as sales of building materials and construction equipment, purchasing, testing of construction materials, drafting, estimating, specification writing, and inspection. Excellent promotion and advancement opportunities exist for graduates of this curriculum.

This is an ECPD accredited Engineering Technology curriculum. ECPD is the Engineers Council for Professional Development.

1st YEAR

			Hours Per Week		
Term 1			Class	Lab	Credits
AD	100	Orientation	1	0	0
CH	104	†Chemistry	3	2	4
LA	801	English	3	0	3
MA	140	§College Algebra and Trigonometry	4	0	4
MT	110	††Engineering Drawing	0	3	1
MT	130	†††Manufacturing Processes	2	2	3
PH	143	Physics	3	2	4
			16	9	19

†Students who have passed a high school chemistry regents with 80% or better or CS 140 Chemistry with a C or better will not be required to take CH 104 Chemistry. Another course may be substituted with department approval.

††Students who have successfully completed the Collegiate Studies sequence in Engineering Drawing will not be required to take MT 110 Engineering Drawing.

†††Waiver of this course is subject to department approval.

Term 2					
CT	110	Architectural Drawing	0	3	1
CT	119	Plain Concrete	2	3	3
LA	802	English	3	0	3
MA	141	§Calculus	3	0	3
MT	155	Applied Mechanics	3	0	3
PH	144	Physics	4	2	5
			15	8	18

Term 3					
CT	140	Surveying	3	6	5
CT	153	Strength of Materials	3	3	4
CT	211	Architectural Drawing	0	3	1
		§§Elective	0-3	0-3	0-4
LA	803	English	3	0	3
MA	142	§Calculus	3	0	3
			12-15	12-15	16-20

§Students whose mathematics background is deemed adequate by the Admissions Office may start their mathematics sequence with MA 141. They would then take MA 142 and MA 240 in the second and third terms.

§§ET 141 Electricity or PH 145 Physics (Electricity and Magnetism). Approval of Department required for PH 145 Physics.

Civil Technology student traversing on campus for a field survey problem.

Civil Technology

2nd YEAR

			Hours Per Week		
Term 4			**Class**	**Lab**	**Credits**
CT	141	Surveying	2	6	4
CT	212	Architectural Drawing	0	3	1
CT	254	Strength of Materials	3	0	3
AD	120	Computer Programming	2	2	3
LA		Social Science Elective	3	0	3
		*Elective	0-3	0	0-3
			10-13	11	14-17
Term 5					
CT	220	Reinforced Concrete Design	3	4	4
CT	230	Building Design	3	3	4
CT	283	Route Surveying & Highway Design	3	3	4
LA		Social Science Elective	3	0	3
		**Elective	0-3	0-3	0-3
			12-15	9-12	15-18
Term 6					
CT	221	Structural Steel Design	3	3	4
CT	250	Estimating & Construction Planning	3	3	4
CT	270	Soil Mechanics	3	3	4
LA		Social Science Elective	3	0	3
		***Elective	0-3	0-3	0-4
			12-15	9-12	15-19

*CT 260 Hydraulics or MA 240 Calculus.
**CT 274 Environmental Sanitation or MA 241 Calculus.
***CT 273 Environmental Sanitation or MA 242 Calculus.

DENTAL HYGIENE

Dental hygienists are in great demand in this highly respected profession. Their services are performed in private dental practices, school systems, hospitals, industry and institutional dental clinics. Also in research programs, schools of dental hygiene, public health agencies, the Peace Corps and on the ship S. S. Hope. Regardless of the type of employment, one of the most important activities is that of constantly being a dental health educator.

Students learn to perform clinical, educational and assisting duties in a department that has the most modern equipment. The dental hygienist, who always works under the supervision of a dentist, is the only member of the auxiliary group in the dental profession who is licensed to perform services directly in the mouth of a patient; therefore, good manual dexterity is necessary. Sincere interest in working with people, good health, pleasing personality and good moral character are also important qualifications.

Dental hygiene duties, in compliance with respective state laws, include (a) the removal of deposits and stains on the teeth, (b) the application of fluoride solutions to the teeth, (c) individual and group dental health instruction, (d) exposing, processing and mounting of dental X-ray films, and (e) assisting the dentist at the dental chair and in the laboratory.

All dental hygienists must pass a licensing examination (written and practical) in the state in which they wish to practice. A written National Board Examination is currently accepted by 47 states, the District of Columbia and the Virgin Islands. .

Graduates of Broome Community College's Dental Hygiene curriculum may continue to study for a Bachelor of Science Degree in Health Education, for which a formal arrangement has been made with the State University College at Cortland, New York. Credits are also acceptable for transfer to other degree-granting colleges in the country.

The Dental Hygiene Department is equipped to handle limited numbers of students, so that applications should be submitted to the College at the beginning of the senior year of high school. It is also recommended that applicants take the Dental Hygiene Aptitude Test.

The curriculum is fully accredited by the Council on Dental Education of the American Dental Association.

Dental Hygiene student removing tartar from a young patient's teeth with the use of scaling instruments in the College's Dr. James T. Ivory Dental Hygiene Clinic.

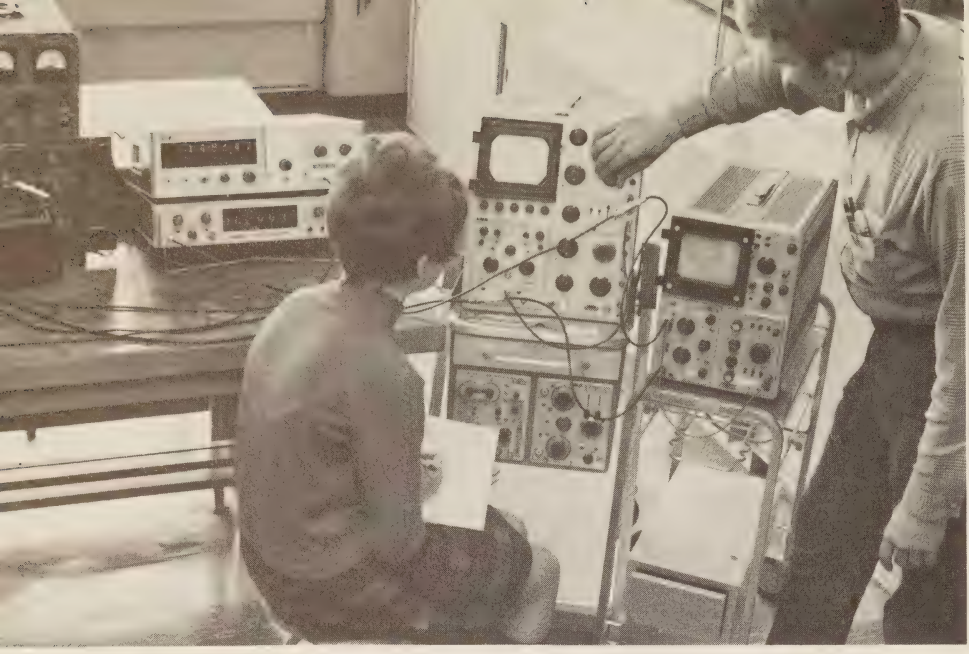
Dental Hygiene

1st YEAR

			Hours Per Week		
Term 1			Class	Lab	Credits
DH	100	Dental Hygiene and Ethics	2	0	2
DH	140	Oral Anatomy	2	2	3
BI	111	First Aid	1	0	1
BI	171	Anatomy and Physiology	3	2	4
CH	101	Chemistry	3	2	4
LA	801	English	3	0	3
			14	6	17
Term 2					
DH	101	Dental Manikin Practice	1	4	3
DH	141	Oral Anatomy	2	2	3
BI	172	Anatomy and Physiology	3	2	4
CH	102	Chemistry	3	2	4
LA	802	English	3	0	3
			12	10	17
Term 3					
DH	103	Clinical Dental Hygiene	1	3	2
DH	158	Dental Office Practice	2	2	3
DH	244	Preventive Dentistry	3	0	3
BI	159	Microbiology	3	4	5
BI	176	Dental Histology	3	2	4
LA	803	English	3	0	3
			15	11	20

2nd YEAR

Term 4					
DH	204	Clinical Dental Hygiene	1	12	4
DH	251	Dental Radiography	1	2	2
DH	254	General and Oral Pathology	2	0	2
DH	260	Dental Laboratory Practice	2	2	3
DH	283	Dental Health Education	3	0	3
LA	810	Psychology	3	0	3
			12	16	17
Term 5					
DH	205	Clinical Dental Hygiene	1	12	4
DH	252	Clinical Dental Radiography	0	2	1
DH	255	General and Oral Pathology	2	0	2
DH	261	Nutrition	3	0	3
DH	267	Anesthesia	2	0	2
DH	284	Dental Pharmacology	3	0	3
DH	287	Public Health	2	0	2
			13	14	17
Term 6					
DH	206	Clinical Dental Hygiene	1	12	4
DH	253	Clinical Dental Radiography	0	2	1
DH	268	Special Dental Practice	3	0	3
LA	804	Effective Speaking	3	0	3
LA	820	Economics	3	0	3
LA	830	Sociology	3	0	3
			13	14	17



Electrical Technology students checking amplifier characteristics, using oscilloscopes and frequency counters in the Electronics Laboratory.

ELECTRICAL TECHNOLOGY

Few people are unaware of what an important part electricity plays in our daily lives, in conveniences like television, air-conditioning, lighting and innumerable kitchen appliances.

But electricity is also one of the cornerstones upon which space exploration and our national defense are built. The amazing development of radar, electronics and solid state hardware is based on electricity.

The rapid advances in electronics and related electrical fields have created a need for engineers, engineering technicians and specialists to meet future needs.

Two-year technical college programs, like this one, have become increasingly important in preparing better trained men and women for work in the electrical field. These colleges train men and women to do highly specialized technical work. Although few realize it, there is an excellent place for women in the electrical field.

Job opportunities are in such areas as electrical design drafting, technical sales, electronic computers and medical electronics. Graduates can also find employment in power generation and distribution, communications and the design and evaluation of electrical equipment.

Some of the companies that have hired Broome Community College Electrical Technology graduates are New York State Electric and Gas Corp., IBM, Xerox, Eastman Kodak, GAF and DuPont.

Although the principal objective of this curriculum is to prepare students for employment immediately following graduation, many graduates have successfully transferred to four-year colleges in Bachelor of Technology programs in the past few years.

This is an ECPD accredited Engineering Technology curriculum. ECPD is the Engineers Council for Professional Development.

Electrical Technology

1st YEAR

			Hours Per Week		
Term 1			Class	Lab	Credits
ET	101	Electrical Shop	1	3	2
ET	120	Electrical Circuits	4	3	5
ET	130	Engineering Drawing	0	3	1
AD	100	Orientation	1	0	0
LA	801	English	3	0	3
MA	140	*College Algebra and Trigonometry	4	0	4
PH	143	Physics (Mechanics)	3	2	4
			16	11	19
Term 2					
ET	102	Electrical Shop	1	3	2
ET	113	Electricity and Magnetism	3	3	4
ET	121	Electrical Circuits	4	3	5
ET	131	Engineering Drawing	0	3	1
LA	802	English	3	0	3
MA	141	*Calculus	3	0	3
			14	12	18
Term 3					
ET	103	Electrical Shop	0	3	1
ET	250	Electronics	4	3	5
AD	120	Fundamentals of Computer Programming	2	2	3
LA	803	English	3	0	3
MA	142	*Calculus	3	0	3
PH	144	Physics (Heat, Light and Sound)	4	2	5
			16	10	20

2nd YEAR

Term 4					
ET	223	Network Analysis	4	0	4
ET	230	Electrical Design	0	3	1
ET	240	Electrical Machines	4	3	5
ET	251	Electronics	4	3	5
ET	260	Principles of Industrial Management	3	0	3
ET	265	Principles of Solid State Devices	2	0	2
			17	9	20
Term 5					
ET	241	Electrical Machines	4	3	5
ET	252	Electronics	4	3	5
ET	258	Introduction to System Logic	2	2	3
LA		Social Science Elective	3	0	3
		Required Elective:	3	0	3
ET	264	Microcircuits			
MA	241	Calculus			
			16	8	19
Term 6					
ET	231	Electrical Design	0	3	1
ET	242	Automatic Controls	4	3	5
ET	253	Electronics	4	3	5
LA		Social Science Elective	3	0	3
LA		Social Science Elective	3	0	3
			14	9	17

*Students whose mathematics background is deemed adequate by the Admissions Office may start their mathematics sequence with MA 141. They would then take MA 142 and MA 240 in the second and third terms.

ENGINEERING SCIENCE

The level of work covered in the Engineering Science curriculum is primarily designed to prepare graduates to continue their studies in the engineering field in four-year colleges and universities. But there are also employment opportunities for qualified graduates.

The emphasis in this program is on mathematics and physics, so that graduates can transfer to four-year schools into the junior year in physics, engineering and mathematics.

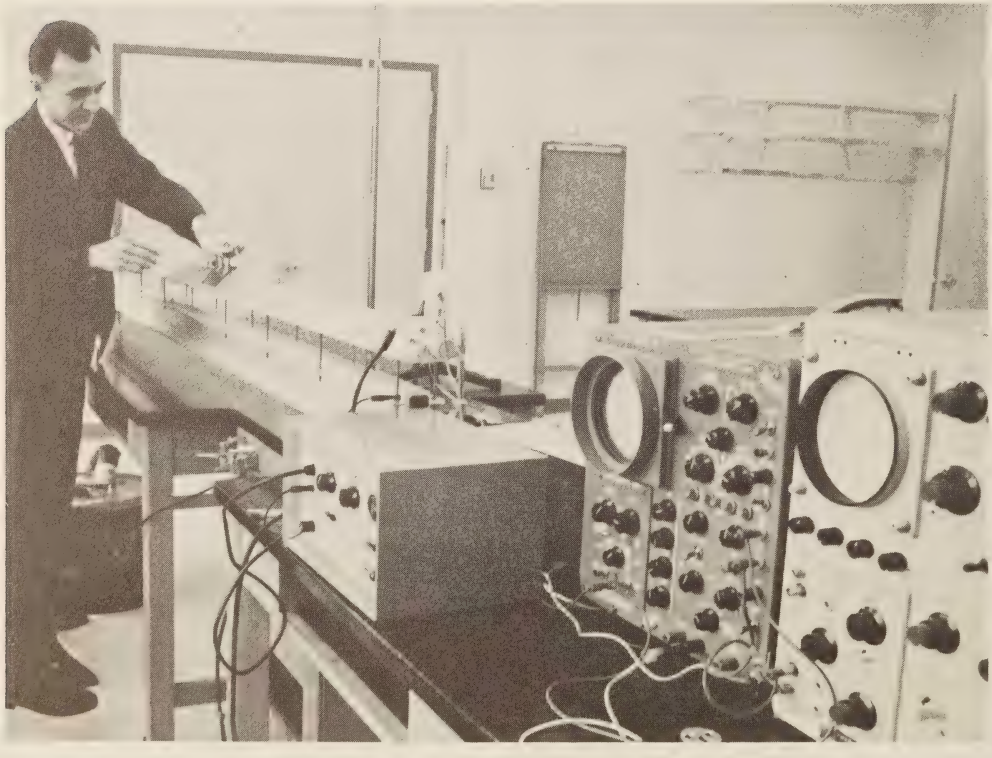
Broome Community College is a member of the New York State Two-Year/Four-Year Engineering College Curriculum Study Committee. This organization's purpose is to facilitate the transfer to four-year colleges, with junior-year standing, of two-year college graduates from engineering science programs. Rensselaer Polytechnic Institute (RPI), Clarkson, Cornell, Syracuse, Union and State University at Buffalo are among the members of the Two-Year/Four-Year Engineering College Curriculum Study Committee who have agreed to accept those two-year college graduates who have been recommended by their Engineering Science departments.

Some of the job opportunities for those who prefer to seek immediate employment lie in the engineering technician field, for example as assistants to engineers in research and development, and positions involving the application of mathematics.

In order for a high school graduate to qualify for admission to the Engineering Science curriculum, he or she must have shown high academic potential on the admissions tests, and demonstrated superior ability in science and mathematics in high school.

Students entering Broome Community College who wish to continue studying for their bachelors' degrees in engineering, applied mathematics or physics will find this the most appropriate course of study.

Engineering Science instructor performing a frictionless air track experiment in a physics laboratory.



Engineering Science

1st YEAR

Term 1			Hours Per Week Class	Lab	Credits
AD	112	Computer Programming for Engineers	2	2	3
CH	135	Chemistry	3	3	4
LA	130	English Composition	3	0	3
MA	170	Calculus with Analytic Geometry	4	0	4
PH	170	Physics (Mechanics)	3	3	4
			15	8	18

Term 2					
CH	136	Chemistry	3	3	4
LA	131	English Composition	3	0	3
MA	171	Calculus with Analytic Geometry	4	0	4
PH	171	Physics (Mechanics and Heat)	3	3	4
MT	103	Engineering Drawing	0	6	2
			13	12	17

Term 3					
CH	137	Chemistry	3	3	4
LA	132	English Composition	3	0	3
MA	172	Calculus with Analytic Geometry	4	0	4
PH	172	Physics (Electricity and Magnetism)	3	3	4
MT	112	Descriptive Geometry	1	2	2
			14	8	17

2nd YEAR

Term 4					
LA	255	Economics	3	0	3
MA	270	Calculus with Analytic Geometry	4	0	4
PH	192	Statics	4	0	4
PH	270	Physics (Light and Sound)	3	3	4
MT	270	Engineering Materials	3	0	3
			17	3	18

Term 5					
LA	256	Economics	3	0	3
MA	271	Differential Equations	3	0	3
PH	210	Electrical Circuits	3	3	4
PH	271	Physics (Atomic)	3	3	4
PH	290	Dynamics	4	0	4
			16	6	18

Term 6					
LA	257	Economics	3	0	3
MA	272	Differential Equations	3	0	3
PH	211	Electrical Circuits	3	3	4
PH	272	Physics (Nuclear)	3	3	4
MT	271	Engineering Materials	3	0	3
			15	6	17

ENVIRONMENTAL HEALTH TECHNOLOGY

This program has been temporarily suspended because of the lack of job opportunities in the field.

Environmental Health Technology is the science of controlling those factors in the physical environment which may exert a harmful effect on man's health. Its scope includes the prevention of communicable diseases and of environmental hazards. It seeks to accomplish these objectives by controlling air and water pollution, liquid and solid waste disposal, housing, milk and food sanitation, industrial hygiene and ionizing radiation.

The environmental health technician is a member of a professional team devoted to improving our living conditions. As such he will be one who assists the sanitary engineer, the public health scientist, the sanitarian, physicians and veterinarians employed in the health field.

The program was designed to provide the students with a broad background of environmental and sanitary sciences emphasizing the practical application of the subjects. In addition, the program deals with the ethical and legal responsibilities of public health personnel and the current status of area and national pollution control programs.

In addition to his education in the classroom and laboratory on campus, the student's training includes inspection tours of milk and food processing plants, water and waste water treatment facilities, as well as radiation installations and hospitals.

The curriculum was devised so that if a student wishes to further his college work he may do so. At the same time the student begins immediately with specialty courses which will prepare him for employment upon graduation.

Graduates receive the Associate in Applied Science degree and are qualified for immediate employment in both the public and private sectors.

The curriculum is approved by the Public Health Council of the State Health Department. Therefore, graduates can become environmental health technicians in health departments without the usual year of traineeship prior to taking the civil service examination.

Environmental Health Technology

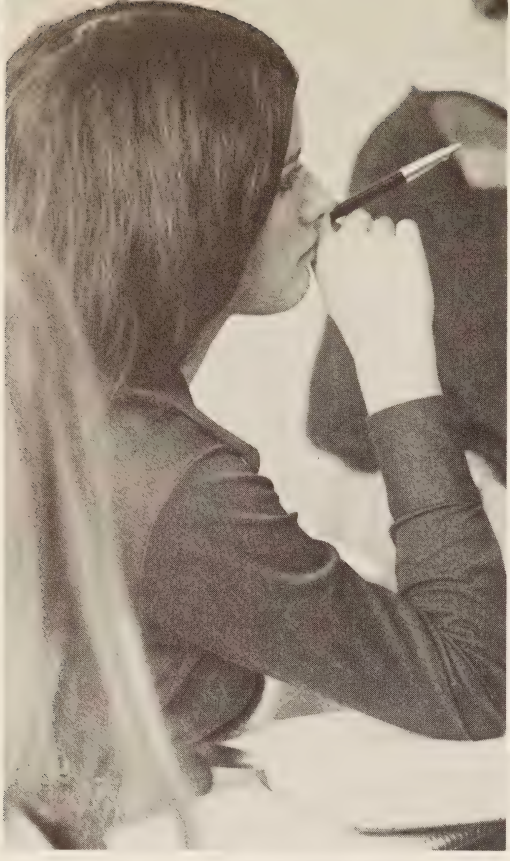
1st YEAR

				Hours Per Week		
Term 1				Class	Lab	Credits
BI	100		Ethics and Orientation	0	2	1
BI	136		Zoological Principles	3	3	4
CH	132		General Chemistry	3	3	4
LA	801		English	3	0	3
MA	101	or	MA 105 Mathematics	3	0	3
MT	110		*Engineering Drawing	0	3	1
				12	11	16
Term 2						
EH	112		Environmental Health	2	0	2
CH	133		General Chemistry	3	3	4
LA	802		English	3	0	3
MA	105	or	MA 122 or MA 141 Mathematics	3	0	3
PH	106		Physics	2	2	3
				13	5	15
Term 3						
EH	201		Atmospheric Pollution Control	3	3	4
BI	106		Limnology	3	3	4
CH	134		General Chemistry	3	3	4
LA	803		English	3	0	3
PH	107		Physics	2	2	3
				14	11	18

2nd YEAR

Term 4						
EH	202		Community Sanitation	3	3	4
EH	204		Water Supply and Pollution Control	3	3	4
BI	250		Microbiology	3	4	5
LA	804		Effective Speaking	3	0	3
			Optional Elective	0-3	0	0-3
				12-15	10	16-19
Term 5						
EH	208		Environmental Health Administration	2	2	3
EH	209		Milk and Food Sanitation	3	3	4
EH	210		Radiologic Health	3	3	4
BI	255		Microbiology	3	6	5
			Optional Elective	0-3	0	0-3
				11-14	14	16-19
Term 6						
EH	205		Water Supply and Pollution Control	3	3	4
BI	207		Parasitology	3	3	4
LA	810		Psychology	3	0	3
LA	830		Sociology	3	0	3
LA	820		Economics	3	0	3
				15	6	17

*Students who have passed CS 132 Engineering Drawing with a C or better will not be required to take MT 110 Engineering Drawing.



LIBERAL ARTS AND SCIENCES

The Liberal Arts curriculum is a two-year university-parallel program designed especially for those who wish to continue their college education at a four-year school. It offers an Associate in Arts degree.

The required and elective courses combine to give the students essential credits in such areas as mathematics, language, science, social studies and the humanities.

Students finishing this curriculum, its science option or its other variations will have a breadth of education that prepares them to transfer to four-year college programs leading to many professional careers. The science option, for example, is excellent for those planning careers in forestry, chemistry, biology or other scientific areas. Those aspiring to become teachers, doctors, dentists, lawyers, pharmacists or law-enforcement officers will find alternatives in the Liberal Arts curriculum designed especially for them.

Students should be aware that many of these alternative curriculums presume a high level of preparation in the secondary school, and they should consult with faculty advisors or counselors when there is doubt about the adequacy of their pre-college academic background.

Students who have identified the four-year college to which they plan to transfer should make sure that their program at Broome Community College is adjusted to be compatible with the curriculum at that upper-division college. For example, a foreign language is required at some four-year schools, though not all. The decision to take a language at BCC might thus be influenced by whether it is required at the college to which one intends to transfer.

Liberal Arts and Sciences

1st YEAR

	Hours Per Week Class	Lab	Credits Per Term
Terms 1, 2 and 3			
LA 130, 131, 132 English Composition	3	0	3
LA 145, 146, 147 Western Civilization	3	0	3
or		or	
LA 148, 149, 150 United States History	3	0	3
*Mathematics or Elective	3-4	0	3-4
**Science	3	3	4
LA 193, 194, 195 Philosophy or Foreign Language	3-4	0-1	3-4
PE 100 Physical Education	2	0	1
	17-19	3-4	17-19

*Students who have completed 3½ units of secondary school mathematics (through Advanced Algebra) may take a one-year sequence in Calculus with Analytic Geometry or a non-mathematics elective.

**Biology, chemistry, physics or physical science. Students may defer this course until the second year and choose an elective instead.

2nd YEAR

Terms 4, 5 and 6			
Literature (English, American or Western World)	3	0	3
Social Science Elective	3	0	3
†3 Electives	9-12	0	9-12
Physical Education (Elective)	0-2	0	0-1
	15-20	0	15-19

†Students must take enough elective hours to fulfill the degree requirement of a minimum of 96 credit hours.

NOTE—Students' choice of courses must consist of three-term sequences.

MODEL CAREER PROGRAMS

The following programs are shown as typical "models" for the careers indicated and should not be regarded as inflexible in the courses cited. These models are designed to give a student a chance to earn the Associate in Arts degree at Broome, so that he can continue at a four-year college or university in pursuit of a baccalaureate degree in the particular field of his choice.

Pre-Law

1st Year

Science
English Composition
Western Civilization
Foreign Language
Mathematics
Physical Education

2nd Year

Political Science
Sociology
Psychology
Literature
1-Term courses:
- Effective Speaking
- American Economic History
- Logic

Physical Education (elective)

Police Science

1st Year	2nd Year
*Police Science courses	*Police Science courses
English Composition	Science
Philosophy	Psychology
Sociology	Mathematics or elective
U. S. History	Literature
Physical Education	Physical Education (Elective)

*These courses are given only in the evening and most carry 2 semester credits, in contrast to quarter credits for all the other courses.

Liberal Arts—Science Option

This option is especially appropriate for students whose objectives are to study chemistry, biology, forestry or other science programs at a four-year college after graduation from Broome. Successful candidates will receive the Associate in Science degree.

1st YEAR

	Hours Per Week		Credits Per
	Class	Lab	Term
Terms 1, 2 and 3			
LA 130, 131, 132 English Composition	3	0	3
LA 145, 146, 147 Development of Western Civilization	3	0	3
or		or	
LA 148, 149, 150 United States History	3	0	3
*Mathematics or Philosophy or Foreign Language	3-4	0	3-4
**Science			
**Science	6	5-6	8
Physical Education	2	0	1
	17-18	5-6	18-19

*Students who have not passed Advanced Algebra or its equivalent in high school (usually 3½-4 units) will take MA 150, 151, 152 the first year followed by MA 160, 161, 162 in the second year. Students must have the equivalent of MA 160, 161, 162 to take the non-mathematics elective.

2nd YEAR

Terms 4, 5 and 6			
Literature (English, American or Western World)	3	0	3
Social Science	3	0	3
**Science			
**Science	6	5-7	8-9
***Mathematics or Elective	3-4	0	3-4
Physical Education (Elective)	0-2	0	0-1
	15-18	5-7	17-20

**2 Science courses in each year, chosen from biology, chemistry or physics.

***Elective must be philosophy or a foreign language unless one of these was taken in the first year.

Liberal Arts—Science Option

MODEL CAREER PROGRAMS

The following programs shown here are additional typical "models" for the careers indicated and again should not be regarded as inflexible in the courses cited. They are also designed to give a student a chance to earn the Associate in Science degree at Broome, so that he or she can continue at a four-year college or university in pursuit of a baccalaureate degree in the particular field.

Pre-Pharmacy

1st Year	2nd Year
Biology	Organic Chemistry
Chemistry	Philosophy
English Composition	Economics
Development of Western Civilization	Physics
Calculus with Analytic Geometry	Literature
Physical Education	Physical Education (Elective)

Pre-Medicine or Pre-Dental

1st Year	2nd Year
Biology	Organic Chemistry
Chemistry	Psychology
English Composition	Physics
Calculus with Analytic Geometry	Literature
History	Foreign Language
Physical Education	Physical Education (Elective)

The "model" curriculum offerings shown in this section are not intended to be all-inclusive. Students with other than the cited objectives may still find the Liberal Arts and Sciences curriculum most appropriate, as it can enable graduates to transfer to many four-year colleges and universities.

MECHANICAL TECHNOLOGY

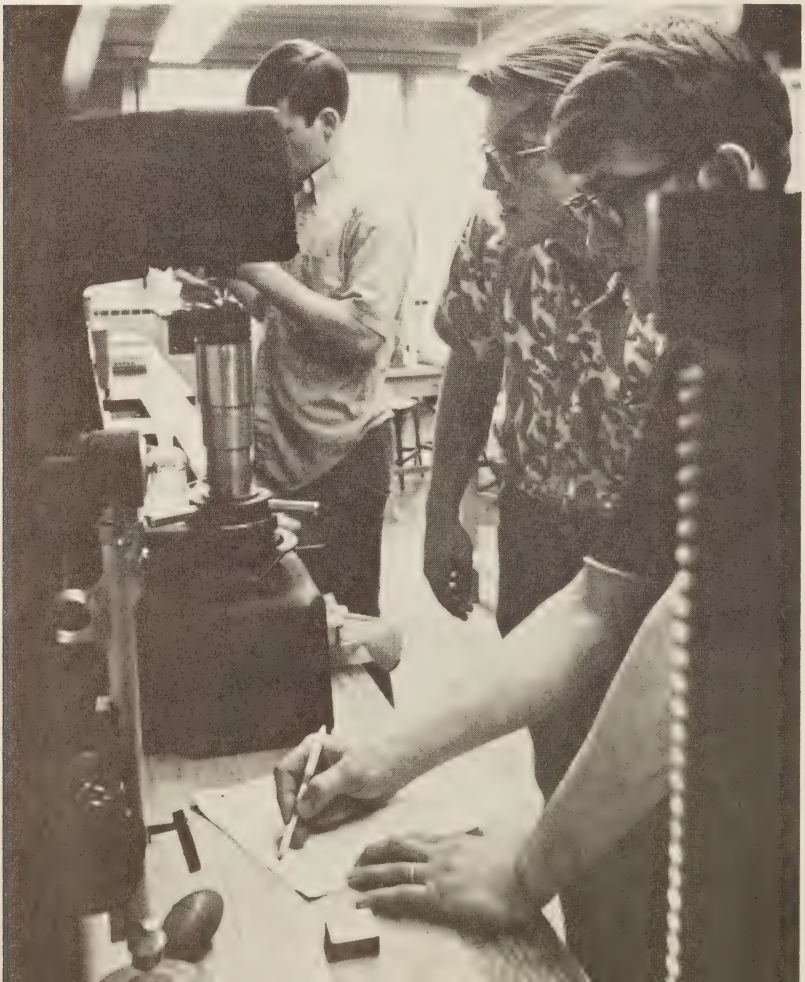
The nature of industry today makes it more important than ever that applicants for employment have a high degree of technical competence. The purpose of the Mechanical Technology curriculum is to prepare qualified young people of our community to fill the need in industry and business for engineering technicians in the mechanical field.

Initial employment opportunities are in the area between the skilled craftsman and the professional engineer, with the emphasis in the direction of the engineer.

Recent graduates have been employed in such areas as design drafting, product design, metallurgical laboratories, quality control, time study, purchasing, technical writing and process planning, to name just a few. Some of the companies hiring recent graduates are New York State Electric and Gas Corp., Fairbanks Co., Eastman Kodak, Xerox and Union Carbide. Many graduates accept positions far beyond the boundaries of New York State, even though the attempt is made to satisfy the needs of industry in Broome County.

This is an ECPD accredited Engineering Technology curriculum. ECPD is the Engineers Council for Professional Development.

Mechanical Technology students testing the hardness of metals in the Metallurgy Laboratory, using a Rockwell hardness tester. Camera shoots through a Brinell hardness tester.



Mechanical Technology

1st YEAR

			Hours Per Week		
Term 1			Class	Lab	Credits
MT	110	*Engineering Drawing	0	3	1
MT	130	Manufacturing Processes	2	2	3
AD	100	Orientation	1	0	0
LA	801	English	3	0	3
LA		Social Science Elective	3	0	3
MA	140	**College Algebra and Trigonometry	4	0	4
PH	143	Physics	3	2	4
			16	7	18
Term 2					
MT	111	Eng. Drawing and Descriptive Geometry	1	3	2
MT	131	†Manufacturing Processes	1	3	2
MT	155	Applied Mechanics	3	0	3
LA	802	English	3	0	3
MA	141	**Calculus	3	0	3
PH	144	Physics	4	2	5
			15	8	18
Term 3					
MT	132	Manufacturing Processes	1	3	2
MT	156	Applied Mechanics	3	0	3
CH	104	***Chemistry	3	2	4
LA	803	English	3	0	3
MA	142	**Calculus	3	0	3
PH	145	Physics	3	2	4
			16	7	19

2nd YEAR

Term 4					
MT	240	††Precision Measurement	1	3	2
MT	257	Strength of Materials	3	3	4
MT	261	Fluid Mechanics	3	0	3
AD	120	Computer Programming	2	2	3
ET	127	Electricity	3	3	4
LA		Social Science Elective	3	0	3
			15	11	19
Term 5					
MT	165	Metallurgy	3	3	4
MT	220	Mechanical Design	2	3	3
MT	260	Thermodynamics	3	3	4
MT	267	Statistical Quality Control	3	2	4
ET	128	Electricity	3	3	4
			14	14	19
Term 6					
MT	135	Materials and Processes	3	3	4
MT	221	Mechanical Design	3	3	4
MT	262	Thermodynamics	3	3	4
ET	129	Electronics	3	3	4
LA		Social Science Elective	3	0	3
			15	12	19

*Students who have successfully completed the Collegiate Studies sequence in Engineering Drawing will not be required to take MT 110 Engineering Drawing.

**Students whose mathematics background is deemed adequate by the Admission Office may start their mathematics sequence with MA 141. They would then take MA 142 and MA 240 in the second and third terms.

***Students who have passed a high school chemistry regents with 80% or better or CS 140 Chemistry with a "C" or better will not be required to take CH 104 Chemistry. Another course may be substituted by the department.

†Students with prior machine-shop practice may substitute a social science elective, with approval of the department.

††Students who have maintained a "C" grade level in all prior mathematics courses may elect to substitute an additional mathematics course, with approval of the department.

MEDICAL LABORATORY TECHNOLOGY

The demand for medical laboratory technicians continues to increase, with the majority finding employment in hospital clinical laboratories and in analytical, control and research laboratories of chemical and pharmaceutical companies. Others are employed as research assistants at large universities and still others have continued their higher education toward the baccalaureate in this field at a four-year college or university.

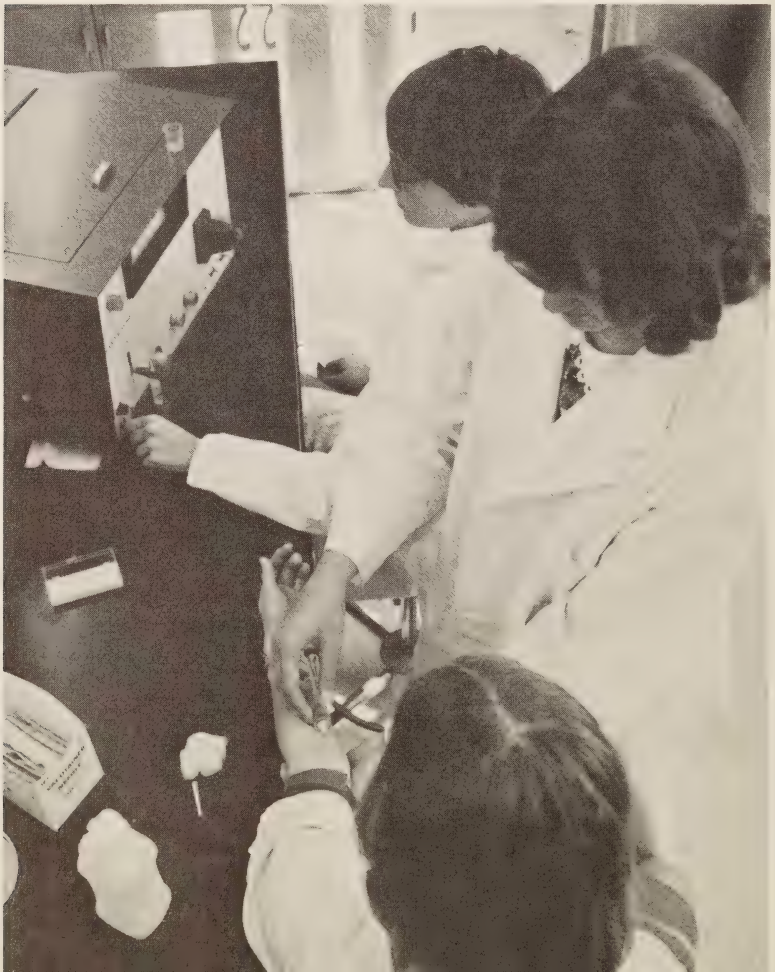
To provide the background necessary for work in these areas, the program includes courses in chemistry, physiology, microbiology and physics.

Extensive laboratory work in bioanalytical procedures, chemical instrumentation, microbiological and immunological techniques and radiation physics helps to develop the skill needed for a wide range of job opportunities.

Work in the sciences is balanced by a program in general education including social sciences, English and mathematics.

Training in clinical laboratories provides the opportunity for the practical application of the work studied on the campus.

Medical Laboratory Technology student drawing blood from another student for purpose of conducting analysis with the hemacytometer pictured at top left.



Medical Laboratory Technology

1st YEAR

			Hours Per Week		
Term 1			Class	Lab	Credits
BI	100	Ethics and Orientation	0	2	1
BI	136	Zoological Principles	3	3	4
CH	121	Chemistry	3	3	4
LA	801	English	3	0	3
LA	810	Psychology	3	0	3
MA	101	*Mathematics	3	0	3
			15	8	18
Term 2					
BI	137	Anatomy and Physiology	3	3	4
CH	122	Chemistry	3	3	4
LA	802	English	3	0	3
MA	105	Mathematics	3	0	3
PH	106	Physics	2	2	3
			14	8	17
Term 3					
BI	134	Physiology (Bioanlysis)	0	3	1
BI	138	Anatomy and Physiology	3	3	4
CH	123	Chemistry	3	3	4
LA	803	English	3	0	3
PH	107	Physics	2	2	3
PH	110	Physics (Radiation)	2	2	3
			13	13	18

2nd YEAR

Summer Term

Term 4					
BI	233	Introduction to Clinical Physiology	2	0	2
BI	234	Physiology	2	6	4
BI	250	Microbiology	3	4	5
LA	820	Economics	3	0	3
LA	830	Sociology	3	0	3
			13	10	17

Fall Term

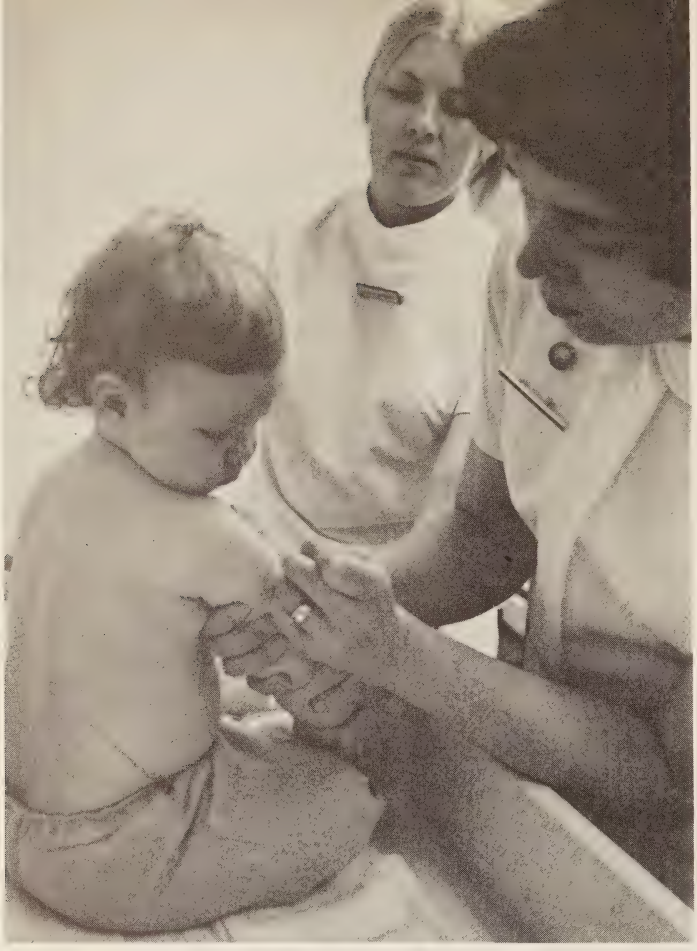
Clinical Laboratory Experience ..... Graduation Requirement

Term 5					
BI	235	Physiology	2	4	4
BI	251	Microbiology	3	4	5
CH	224	Organic Chemistry	3	3	4
CH	226	Instrumental Analysis	3	5	5
			11	16	18
Term 6					
BI	240	Physiology	2	6	4
BI	252	Microbiology	2	4	4
CH	225	Organic Chemistry	2	3	3
CH	227	Instrumental Analysis	3	5	5
		Elective	3	0	3
			12	18	19

Summer Term

Clinical Laboratory Experience ..... Graduation Requirement

*MA 101 Mathematics will not be required if the student has had satisfactory prior training. Alternate course will be substituted.



Medical Office Assistant student assisting the inoculation of a young patient in a physician's office as part of her externship program.

MEDICAL OFFICE ASSISTANT

The medical office assistant has many employment opportunities in physicians' offices and related fields. Some of these are in medical centers, nursing homes, research centers, hospital administrative offices and as a school medical assistant. Broome Community College prepares young adults for this career by offering specialized training that combines medical office management with office laboratory procedures.

In addition to a basic knowledge of such skills as typing, accounting and office procedure, the assistant must know such technical subjects as anatomy, physiology, microbiology, pharmacology and chemistry. Courses in English, social sciences and mathematics provide general background. Laboratory procedures of a physician's office, such as urinalysis, hematology, electrocardiography and audiography, complete the program of studies.

Students gain practical experience in administrative responsibilities, clinical laboratory procedures and assisting the physician in medical offices two days a week during the last two terms of the senior year.

The program is accredited by the Council on Medical Education of the American Medical Association and by the American Association of Medical Assistants. Graduates may become fully certified by taking the Certified Medical Assistants Examination.

Medical Office Assistant

1st YEAR

				Hours Per Week		
Term 1				**Class**	**Lab**	**Credits**
BI	100		Ethics and Orientation	0	2	1
BI	136		Zoological Principles	3	3	4
BU	161	or	BU 162 *Typewriting	0	5	2
CH	101		Chemistry	3	2	4
LA	801		English	3	0	3
MA	101	or	MA 105 Mathematics	3	0	3
				12	12	17
Term 2						
MR	102		Medical Terminology	2	2	3
BI	137		Anatomy and Physiology	3	3	4
BU	162		Typewriting or Elective	0-3	5-0	2-3
CH	102		Chemistry	3	2	4
LA	802		English	3	0	3
				11-14	12-7	16-17
Term 3						
MR	103		Terms and Transcription	2	4	4
BI	138		Anatomy and Physiology	3	3	4
BI	205		Medical Office Procedures	2	4	4
LA	803		English	3	0	3
BU	151		Business English	3	0	3
				13	11	18

*Students will be tested during the first week of the term. Depending on performance, they will be assigned to either BU 161 or BU 162 Typewriting.

2nd YEAR

Term 4					
BI	204	Medical Office Procedures	2	4	4
BI	250	Microbiology	3	4	5
BU	276	Medical Typewriting	2	3	3
LA		Social Science Elective	3	0	3
			10	11	15
Term 5					
BI	206	Medical Office Procedures	2	4	4
BI	244	**Directed Practice	1	16	5
BU	277	Advanced Medical Transcription	2	3	3
LA	804	Effective Speaking	3	0	3
LA		Social Science Elective	3	0	3
			11	23	18
Term 6					
BI	245	**Directed Practice	1	16	5
BI	285	Pharmacology	3	0	3
BU	284	Medical Office Accounting	2	3	3
LA		Social Science Elective	3	0	3
		Elective	3	0	3
			12	19	17

**Directed Practice as in physician's office or medical center.

MEDICAL RECORD TECHNOLOGY

A medical record is the permanent report of a person's illness or injury, kept to preserve information of medical, scientific and legal value. The record includes all medical reports which describe how the patient's illness was diagnosed and treated. Medical records are needed to help doctors diagnose and treat future illness, to verify insurance claims, to plan hospitals, to inform the public health officials, and to aid researchers.

The medical record technician works in the medical record department of a hospital, clinic, nursing home, school of veterinary medicine or other health facility and is responsible for many aspects of preparing, analyzing and preserving health information needed by the patients, by the hospital and by the public. The duties include reviewing medical records for completeness and accuracy and also translating diseases and operations into the proper coding symbols.

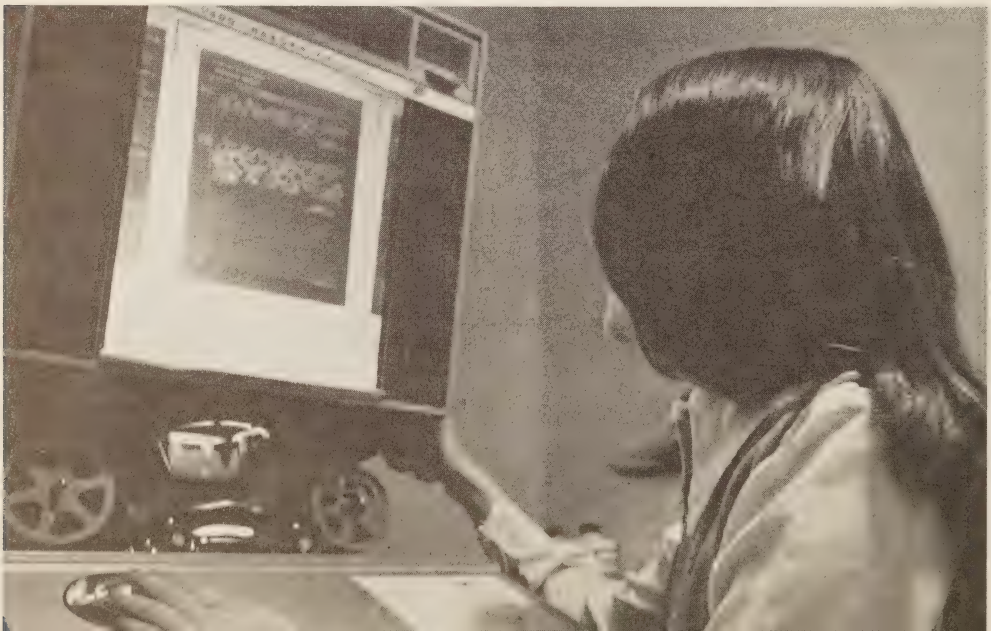
They include filing medical records, preparing records for microfilming, typing reports of operations, X-rays and laboratory examinations, as well as histories, physical examinations and discharge summaries, compiling statistics of many kinds, assisting the medical staff by preparing special studies and tabulating data from records for research. Supervising the day-to-day operation of a medical record department, taking records to court and maintaining the flow of health information to departments of the hospital are also parts of the total work picture.

Practice in the college medical record library as well as in the medical record department of cooperating hospitals provides opportunity for educational experience. This experience is the vital core of the program.

This curriculum is accredited by the Council on Medical Education of the American Medical Association and the American Medical Record Association.

Students in this program are eligible to take the Medical Record Accreditation Examination following graduation and upon completion receive the title of Accredited Record Technician (ART).

Medical Record Technology student using microfilm viewer in a hospital medical record department as part of her directed practice.



Medical Record Technology

1st YEAR

				Hours Per Week Class	Lab	Credits
Term 1						
MR	100		Introduction to Medical Record Science	0	2	1
BI	136		Zoological Principles	3	3	4
BU	161	or	BU 162 *Typewriting	0	5	2
CH	101		Chemistry	3	2	4
LA	801		English	3	0	3
MA	101	or	MA 105 Mathematics	3	0	3
				12	12	17
Term 2						
MR	102		Medical Terminology	2	2	3
BI	137		Anatomy and Physiology	3	3	4
BU	162		Typewriting or Elective	0-3	5-0	2-3
CH	102		Chemistry	3	2	4
LA	802		English	3	0	3
				11-14	12-7	16-17
Term 3						
MR	103		Terms and Transcription	2	4	4
MR	105		Medical Record Science	3	3	4
BI	138		Anatomy and Physiology	3	3	4
LA	803		English	3	0	3
BU	151		Business English	3	0	3
				14	10	18

*Students will be tested during the first week of the term. Depending on performance, they will be assigned to either BU 161 or BU 162 Typewriting.

Summer Term

MR	144		**Directed Practice in Hospital (4 weeks) ..... Graduation Requirement

2nd YEAR

Term 4						
MR	224		Medical Record Science	3	3	4
MR	244		**Directed Practice in Hospital	1	16	5
BU	276		Medical Typewriting	2	3	3
LA	804		Effective Speaking	3	0	3
LA			Social Science Elective	3	0	3
				12	22	18
Term 5						
MR	225		Medical Record Science	3	3	4
MR	244	or	MR 245 **Directed Practice in Hospital	1	16	5
BU	130		Introduction to Electronic Data Processing	3	0	3
BU	277		Advanced Medical Transcription	2	3	3
LA			Social Science Elective	3	0	3
				12	22	18
Term 6						
MR	237		Trends in Medical Record Science	2	0	2
MR	245		**Directed Practice in Hospital	1	16	5
BI	285		Pharmacology	3	0	3
BU	242		Computer Programming—COBOL	2	2	3
LA			Social Science Elective	3	0	3
				11	18	16

**480 hours of directed practice are required for graduation. This is the total number of hours taken in MR 144, MR 244 and MR 245. The senior class will be divided into sections in the 2nd year, so that some students will be taking MR 244 in Term 4 and some in Term 5, while some will be taking MR 245 in Term 5 and others in Term 6. In any event, students must pass 8 credits in the MR 244 and MR 245 course sequence.

Nursing student adjusting sling on a patient.

NURSING

Broome Community College offers a two-year, college-based curriculum to prepare graduates for immediate entrance into the first level of registered nursing. Graduates of this curriculum are eligible to take the New York State licensing examination for registered nurses. They are qualified for immediate employment in bedside nursing care, or they may wish to continue their education for the baccalaureate and higher degrees in the nursing field.

The curriculum operates as a college program, with classes and laboratories held on the campus. Clinical instruction is in the cooperating hospitals of the Triple Cities. The clinical experiences include caring for individuals in all age groups, as well as observation periods in community health and welfare agencies.

Mature men and women are encouraged to enter this program along with recent high school graduates, whether they are married or single.

Nursing

Students planning to continue their education at a four-year college should consult with the department chairman before registering for the first year at Broome Community College.

		1st YEAR	Hours Per Week Class	Lab	Credits
Term 1					
RN	121	*Nursing: Meeting Basic Human Needs	4	6	6
BI	136	Zoological Principles	3	3	4
LA	286	Psychology	3	0	3
LA	801	English	3	0	3
			13	9	16
Term 2					
RN	123	*Nursing: Beginning of Life Cycle	4	6	6
BI	137	Anatomy and Physiology	3	3	4
LA	287	Psychology	3	0	3
LA	802	English	3	0	3
			13	9	16
Term 3					
RN	124	*Nursing: Continuation of Life Cycle	4	6	6
BI	138	Anatomy and Physiology	3	3	4
LA	288	Psychology	3	0	3
LA	803	English	3	0	3
		Elective	3	0	3
			16	9	19
		2nd YEAR			
Term 4					
RN	224	*Nursing: Assessment of Problems Resulting from Stress	6	12	10
BI	250	Microbiology	3	4	5
LA	280	Sociology	3	0	3
			12	16	18
Term 5					
RN	225	*Nursing: Assessment of Problems Resulting from Stress	6	12	10
RN	235	Trends in Nursing	0	2	1
LA	281	Sociology	3	0	3
		Elective	3	0	3
			12	14	17
Term 6					
RN	226	*Nursing: Assessment of Problems Resulting from Stress	6	12	10
RN	236	Trends in Nursing	0	2	1
LA	282	Sociology	3	0	3
		Elective	3	0	3
			12	14	17

*Laboratory includes clinical experience in all area hospitals.

RADIOLOGIC TECHNOLOGY

Radiologic technicians are in demand, with the majority finding employment in hospitals, with doctors who maintain private practices, with government agencies, both civil and military, and in industry. Their work consists primarily of operating X-ray machines to determine the presence of injury or disease in patients. They also assist physicians in using radiation for treatment of diseases.

The course in Radiologic Technology at Broome Community College consists of two academic years on the campus and two summers at cooperating hospitals.

Upon satisfactory completion of the program, the student receives the Associate in Applied Science degree from the College. He or she is then eligible to take the New York State Health Department examination, which must be passed in order to be a licensed practicing radiologic technician. The same examination is required for civil service appointments.

The student is also qualified to take the diploma examination of the American Registry of Radiologic Technologists so that he/she may become a Registered Technician (R.T.).

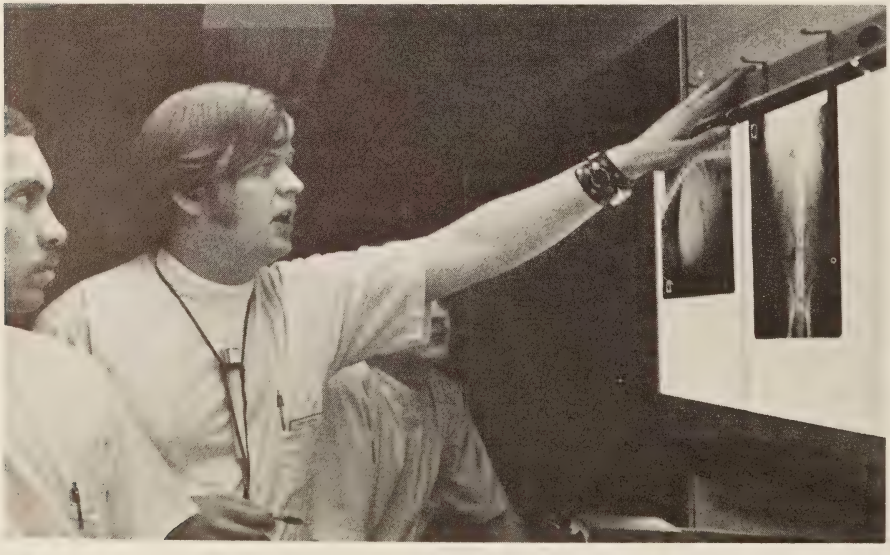
A radiologic technician needs to understand why things are done, as well as to know how to do them. Thus at Broome, courses are designed to give the student the proper background, so that he can understand the principles involved in his work.

Training in the radiology department of the cooperating hospitals provides the opportunity for the practical application of the college study. This training is the vital core of the program since it enables students to observe and assist in the handling of sick and injured patients as they undergo a wide variety of radiological examinations.

The young man or woman who desires to qualify for this career must be physically capable and mentally alert. He must be fitted by training and personality to work with the sick and injured as well as with the medical profession.

The curriculum is accredited by the American Medical Association's Council of Medical Education.

Radiologic Technology students examining radiographs that they have taken in the campus X-ray Laboratory.



Radiologic Technology

1st YEAR

			Hours Per Week		
Term 1			Class	Lab	Credits
RT	141	Hospital Radiographic Technique (Half Term)	0	16	2
RT	150	Orientation (Half-Term)	2	0	1
RT	151	Patient Care and Medical Terminology	1	2	2
RT	171	Radiography	3	2	4
BI	171	Anatomy and Physiology	3	2	4
LA	801	English	3	0	3
MA	101	*Mathematics	3	0	3
			13-15	6-22	19
Term 2					
RT	142	Hospital Radiographic Technique	0	16	4
RT	152	Ethics and Radiation Protection	1	0	1
RT	172	Radiography	3	2	4
BI	172	Anatomy and Physiology	3	2	4
LA	802	English	3	0	3
PH	106	Physics	2	2	3
			12	22	19
Term 3					
RT	143	Hospital Radiographic Technique	0	16	4
RT	173	Radiography	3	2	4
LA	803	English	3	0	3
PH	107	Physics	2	2	3
PH	110	Physics (Radiation)	2	2	3
			10	22	17

*MA 101 Mathematics or advised mathematics alternate.

Summer Term

RT	144	Hospital Radiographic Technique	Graduation Requirement

2nd YEAR

Term 4					
RT	244	Hospital Radiographic Technique	0	24	6
RT	252	Departmental Administration	1	0	1
RT	255	Nuclear Medicine	1	0	1
RT	274	Radiography	3	2	4
LA		Liberal Arts Elective	3	0	3
			8	26	15
Term 5					
RT	245	Hospital Radiographic Technique	0	24	6
RT	251	Pediatric Radiography	1	0	1
RT	233	Radiation Health	1	0	1
RT	275	Radiography	3	2	4
LA		Liberal Arts Elective	3	0	3
			8	26	15
Term 6					
RT	246	Hospital Radiographic Technique	0	24	6
RT	253	Trends in Radiologic Technology	2	0	2
RT	256	Medical and Surgical Diseases	2	0	2
RT	276	Radiography	3	2	4
LA		Liberal Arts Elective	3	0	3
			10	26	17

Summer Term

RT	247	Hospital Radiographic Technique	Graduation Requirement

COLLEGIATE STUDIES CERTIFICATE PROGRAM

The Collegiate Studies Certificate Program at Broome Community College is a special program designed to suit the individual needs of students to prepare them for acceptance into the degree-granting programs of the college.

It consists of a full-year of study on the campus, with the student taking developmental, preparatory, or exploratory associate degree courses. The selection of these would depend on the student's academic preparedness.

This program has evolved from the experience gained with the original concept of a Pre-Technical offering, which prepared students for the engineering technology curriculums. It was expanded a few years ago to include a broader set of courses to prepare students for all the college's offerings. That was called the General Studies Certificate Program.

The Collegiate Studies Program now enables the college to offer some students courses of different levels, when suitable to their academic backgrounds and goals.

The basic core of courses offered in the Collegiate Studies Program still includes English, mathematics and science to give the student a broad base of academic preparation. This will help him, whether he decides to enter the college's programs in liberal arts, health sciences, engineering or engineering technology, or business.

NUMBERING SYSTEM

The College's course numbers are preceded by two letters which in most instances stand for the department responsible for teaching them. Courses numbered from 100 to 199 are generally first-year level and those from 200 to 299 second-year.

AD	Special Programs (Non-Departmental)
BI	Biological Sciences
BU	Business
CH	Chemistry and Chemical Technology
CS	Collegiate Studies Certificate Program
CT	Civil Technology
DH	Dental Hygiene
EH	Environmental Health Technology
ET	Electrical Technology
LA	Liberal Arts
MA	Mathematics
MR	Medical Record Technology
MT	Mechanical Technology
PE	Physical Education
PH	Physics
PS	Police Science
RN	Nursing
RT	Radiologic Technology

COURSE DESCRIPTIONS

AD 100 Orientation — 0 Credit

Freshmen will be given the opportunity to participate in a regularly scheduled program to broaden their understanding of themselves as students in a specific curriculum and in an academic community. The major emphasis is to enable students to better understand, through discussion, their college, college policies, curriculum objectives, transfer and placement opportunities, as well as available college services. For Business and Engineering Technology freshmen.

1 Class Hour

COMPUTING CENTER

Because many college programs and industries depend on the computer to process data rapidly, both transfer-minded students and those preparing for immediate employment after graduation are introduced to the capabilities of the computer.

The Computing Center's hardware consists of two computers—an IBM 1130 and an IBM 360 Model 20—and a remote terminal which is used on a time-shared basis with the computer on the State University at Binghamton campus.

AD 112 Computer Programming for Engineers — 3 Credits

Fortran IV programming, block diagramming, numbering and coding systems. Use of graphic plotter and empirical equations. For Engineering Science students.

2 Class Hours, 2 Laboratory Hours

AD 120 Fundamentals of Computer Programming — 3 Credits

Fundamental concepts and applications of Fortran programming including discussion of computer history, computer hardware, number systems, flow charting, debugging techniques, sub-programs, plotting, array manipulation, system software.

2 Class Hours, 2 Laboratory Hours
Prerequisite: MA 140 College Algebra and Trigonometry

BIOLOGICAL SCIENCES

BI 100 Ethics and Orientation — 1 Credit

History and scope of health specialties. Field trips. Professional ethics. Responsibility of health personnel to self, employer, physician and patient. Professional affiliation. For students in Environmental Health and Medical Laboratory Technology and Medical Office Assistant curriculums.

2 Laboratory Hours

BI 101 Biology — 4 Credits

A principles approach to the science of biology. As the basis of life, the principle of cellular metabolism is related to cellular structure and function. The principle of organism perpetuation is developed by studies of genetics, embryology and reproduction. For Liberal Arts students.

3 Class Hours, 3 Laboratory Hours

BI 102 Biology — 4 Credits

A principles approach to the science of biology continued. The principles of organism maintenance and integration are developed by an emphasis on human organ systems. The principle of evolution is introduced and exemplified by a survey of the plant and animal kingdoms. For Liberal Arts students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: BI 101 Biology

BI 103 Biology — 4 Credits

A principles approach to the science of biology continued. The principle of diversity is further developed by studying the more highly evolved animal groups. Principle of ecological interrelatedness of organisms. Ecological and evolutionary principles are integrated by considering past and present distribution of organisms on the earth's surface. For Liberal Arts students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: BI 102 Biology

BI 104 Biology Seminar—Current Trends in Biology 1, 1, 1, Credit

Current trends and developments in the biological sciences presented and discussed by students. Each student is expected to present at least one oral report per quarter and to take part in the discussions of other reports. Use of recent literature is stressed. Seminar may be taken each quarter for a maximum of three credits.

2, 2, 2 Class Hours
Prerequisite: BI 103 Biology

BI 106 Limnology — 4 Credits

Chemistry, physics, geology and biology of fresh water lakes, rivers and streams. Water sampling techniques, fresh water organisms, health and recreational aspects of fresh water pollution. For Environmental Health Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: Consent of Instructor

BI 111 Standard First Aid Course — 1 Credit

Fundamentals of first aid as outlined by the standard Red Cross course. For Dental Hygiene students.

1 Class Hour

BI 134 Physiology (Bioanalysis) — 1 Credit

Laboratory introduction to microscopic and chemical analysis of blood and urine. For Medical Laboratory Technology students.

3 Laboratory Hours
Must be taken concurrently with BI 138 Anatomy and Physiology

BI 136 Zoological Principles — 4 Credits

Using examples from the animal kingdom, this course relates fundamental anatomical and physiological factors, thus showing the communality of the biotic world. Cellular respiration, energy transfer, materials transport, evolutionary development, genetic continuity. For students in Environmental Health, Medical Laboratory and Medical Record Technology, Medical Office Assistant and degree Nursing programs.

3 Class Hours, 3 Laboratory Hours

BI 137 Anatomy and Physiology — 4 Credits

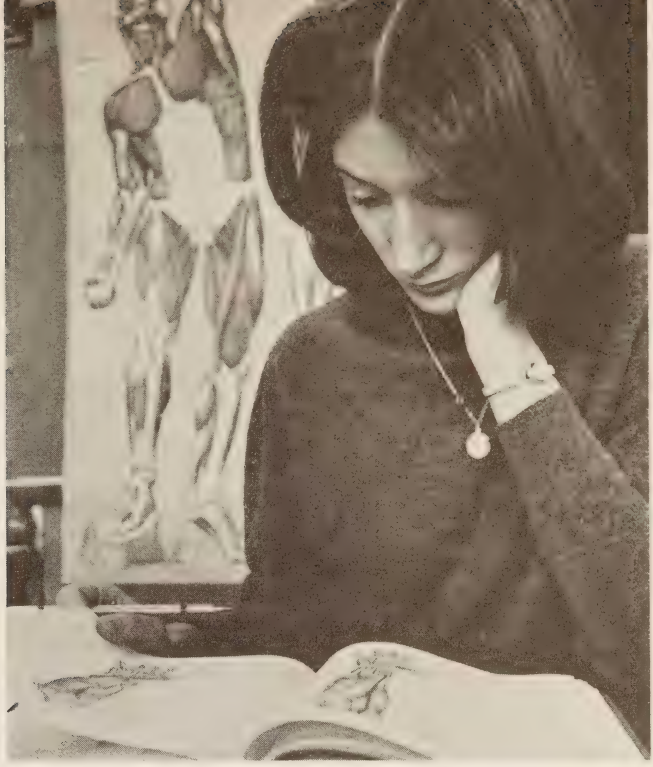
Structure and function of the human body, including both microscopic and gross techniques. Through a systematic approach such topics as the skeleton, muscles, nervous control and circulation are included. Laboratory work complements and amplifies the class topics through microscopic study, foetal pig dissection and basic physiological techniques. For students in Medical Laboratory and Medical Record Technology and Medical Office Assistant and degree Nursing programs.

3 Class Hours, 3 Laboratory Hours
Prerequisite: BI 136 Zoological Principles or BI 103 Biology

BI 138 Anatomy and Physiology — 4 Credits

Continued study of the human body, including respiration, excretion, digestion, endocrine function and reproduction. Laboratory work includes continued dissection of the foetal pig and physiological techniques. For students in Medical Laboratory and Medical Record Technology and Medical Office Assistant and degree Nursing programs.

3 Class Hours, 3 Laboratory Hours
Prerequisite: BI 137 Anatomy and Physiology



Student studying in the Anatomy and Physiology Laboratory.

BI 159 Microbiology — 5 Credits

General and medical microbiology. The basic phases of immunology. Asepsis, disinfection, sterilization, cultivation, identification. Test used for diagnosis and immunization. For Dental Hygiene, General Hospital nursing students.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 102 Chemistry

BI 171 Anatomy and Physiology — 4 Credits

Gross and microscopic anatomy of the human body and the function of its parts. Emphasis on form and structure. Laboratory work includes microscopic anatomy, dissection of the foetal pig and cat, a study of the systems and their interrelationship. For Dental Hygiene and Radiologic Technology students. General Hospital nursing students take a 3-hour laboratory.

3 Class Hours, 2 Laboratory Hours

BI 172 Anatomy and Physiology — 4 Credits

Continued study of gross and microscopic anatomy, the relationship of function to structure, with emphasis on basic physiology. Chemical tests and additional dissection. For Dental Hygiene and Radiologic Technology students. General Hospital nursing students take a 3-hour laboratory.

3 Class Hours, 2 Laboratory Hours
Prerequisite: BI 171 Anatomy and Physiology

BI 176 Dental Histology — 4 Credits

Lecture and laboratory study of the fundamental body tissues and different phases of embryonic development. Emphasis on the origin and structure of the tissues of the oral cavity. For Dental Hygiene students.

3 Class Hours, 2 Laboratory Hours
Prerequisite: BI 172 Anatomy and Physiology

BI 204 Medical Office Procedures — 4 Credits

Laboratory introduction to microscopic and chemical analysis of blood and urine as performed in the physician's office. For Medical Office Assistant students.

2 Class Hours, 4 Laboratory Hours

BI 205 Medical Office Procedures — 4 Credits

Medical assisting procedures used in the physician's office, including office management, caring for medical and surgical instruments, first aid and aide-training for civil emergencies. Professional ethics, jurisprudence and nomenclature. For Medical Office Assistant students.

2 Class Hours, 4 Laboratory Hours

Prerequisite: MR 102 Medical Terminology or the consent of instructor

BI 206 Medical Office Procedures — 4 Credits

Advanced technical procedures in medical assisting, including such specialties as electrocardiography, audiometry, physical therapy. Includes field trips and practice experiences. For Medical Office Assistant students.

2 Class Hours, 4 Laboratory Hours

Prerequisite: BI 205 Medical Office Procedures

BI 207 Parasitology — 4 Credits

Parasites and insects of importance in environmental health. Identification and control procedures. For Environmental Health Technology students.

3 Class Hours, 3 Laboratory Hours

Prerequisite: BI 103 Biology or BI 136 Zoological Principles

BI 233 Introduction to Clinical Physiology — 2 Credits

Emphasis on cellular functions such as respiration, digestion, metabolism, synthesis and excretion. For Medical Laboratory Technology students.

2 Class Hours

Prerequisite: BI 134 Physiology (Bioanalysis) and one term of inorganic chemistry

BI 234 Physiology — 4 Credits

Continued study of physiological processes. Emphasis on blood and circulatory system. For Medical Laboratory Technology students.

2 Class Hours, 6 Laboratory Hours

Prerequisite: BI 134 Physiology (Bioanalysis)

BI 235 Physiology — 4 Credits

Emphasis on the body functions of respiration, digestion, metabolism and excretion. Laboratory work includes related chemical tests and physio-chemical measurements of the body functions. For Medical Laboratory Technology students.

2 Class Hours, 4 Laboratory Hours

Prerequisite: BI 234 Physiology

BI 240 Physiology — 4 Credits

Functions of the body including enzyme systems, the endocrines, electrolyte balance and acid-base regulation. The physiological processes and related assays. For Medical Laboratory Technology students.

2 Class Hours, 6 Laboratory Hours

Prerequisites: BI 235 Physiology and CH 224 Chemistry

BI 244, 245 Directed Practice — 5, 5 Credits

Directed practical experience in the physician's office, medical centers or extended health care facilities. For Medical Office Assistant students.

1 Class Hour, 16 Laboratory Hours each

Prerequisites: BI 204 Medical Office Procedures and BI 205 Medical Office Procedures

BI 250 Microbiology — 5 Credits

The biology of the common bacteria and related microorganisms. Non-pathogens and pathogens. Basic phases of immunology. Asepsis, disinfection, sterilization, cultivation, identification. For students in Environmental Health and Medical Laboratory Technology, Medical Office Assistant and degree Nursing programs.

3 Class Hours, 4 Laboratory Hours
Prerequisite: 1 year of biological science or of chemistry

BI 251 Microbiology — 5 Credits

A continuation of BI 250 Microbiology. Emphasis on infectious diseases, communicability, diagnoses and identification of causative organisms, including microbiology and parasitology. For Medical Laboratory Technology students.

3 Class Hours, 4 Laboratory Hours
Prerequisite: BI 250 Microbiology

BI 252 Microbiology — 4 Credits

Continued study of the principles of immunity and the practice of serological techniques. Agglutination and precipitation tests in general, inflammation and leucocyte response, blood grouping and typing. For Medical Laboratory Technology students.

2 Class Hours, 4 Laboratory Hours
Prerequisite: BI 251 Microbiology

BI 255 Microbiology — 5 Credits

A study of the microorganisms and their analysis in milk and foods. Composition, preservation, chemical and microbial spoilage, food additives, food poisoning. Microbial analysis of water, air and sewage. (Formerly BI 254). **3 Class Hours, 6 Laboratory Hours**

BI 285 Pharmacology — 3 Credits

The action of drugs, their sources, properties, preparation, administration. The mathematics of pharmacy and prescription writing. For Medical Office Assistant and Medical Record Technology students. **3 Class Hours**

Prerequisite: BI 138 Anatomy and Physiology or
BI 172 Anatomy and Physiology

BUSINESS COURSES

Administrative and Marketing Management

BU 101 Accounting — 4 Credits

Basic concepts and procedures used in the accounting cycle. Emphasis on journals, ledgers, financial statements and accounting for cash. **4 Class Hours**

BU 102 Accounting — 4 Credits

Receivables, payables, notes, inventory, long term assets, the voucher system, special journals and subsidiary ledgers. Completion of a practice set is also required.

Prerequisite: BU 101 Accounting

BU 103 Accounting — 4 Credits

Procedures for payroll accounting, partnership accounting, corporation accounting, manufacturing accounting. **4 Class Hours**

Prerequisite: BU 102 Accounting

BU 130 Introduction to Electronic Data Processing 3 Credits

The historical development and current influence exerted by electronic data processing of information in our society. The design of the punched card and the operation of the IBM 29 card punch. Basic computer concepts, hardware units and associated software media, as well as methods of documentation. Terminals as a man-machine interface providing data communication links to computers.

3 Class Hours

Prerequisite: BU 101 Accounting

BU 141 Business Mathematics 3 Credits

Review of arithmetic operations. Preparation and use of shortcut operations. Instruction, review and drill in percentage. Cash and trade discounts, markup, payroll, sales, property and other taxes. Simple and compound interest, bank discounts, interest, investments, annuities.

3 Class Hours

BU 142 Business Statistics 3 Credits

Concepts and mechanics of basic statistical methods applicable to problems of business and economics.

3 Class Hours

Prerequisite: BU 141 Business Mathematics

BU 145 Business Law 3 Credits

Federal and state judicial systems. Basic principles of contracts, involving the requisites for valid contracts, parties to the contracts, offer and acceptance, performance and discharge. Applications of contracts to agency.

3 Class Hours

BU 146 Business Law 3 Credits

Legal aspects of partnerships and corporations. Contracts as applied to sales, bailments, carriers, warehousemen. Negotiable instruments, the rights and obligations associated with them.

3 Class Hours

Prerequisite: BU 145 Business Law

BU 147 Business Law 3 Credits

Background and sources of law including the Federal and state judicial systems. Introduction to legal principles and their relationship to business practices through a survey of contracts, commercial instruments, insurance, personal and real property. For Secretarial students.

3 Class Hours

BU 151 Business English 3 Credits

Development of desirable letter-writing style. Review of basic letter mechanics. Composition of business correspondence, such as inquiry and reply, claim and adjustment, credit and collection, sales and promotion.

3 Class Hours

BU 204 Intermediate Accounting 4 Credits

Assets, liability, capital and operating accounts comprising financial statements. Generally accepted accounting principles followed in the preparation of these statements.

4 Class Hours

Prerequisite: BU 103 Accounting

BU 205 Intermediate Accounting 4 Credits

Consideration of inventory valuation and estimation methods. Investments in stocks and bonds. Acquisition, valuation, use and retirement of fixed assets. Current liabilities.

4 Class Hours

Prerequisite: BU 204 Intermediate Accounting

BU 206 Intermediate Accounting — 4 Credits

Intangible assets. Corporation accounting including handling of stock issuance, treasury stock, bond transactions. Analysis of financial statements. Funds-flow and cash-flow reporting.

4 Class Hours

Prerequisite: BU 205 Intermediate Accounting

BU 207 Cost Accounting — 4 Credits

The nature and purpose of cost accounting. Accounting for direct labor, materials and factory overhead with emphasis on job order costing. Standard cost principles and procedures.

4 Class Hours

Prerequisite: BU 103 Accounting

BU 208 Cost Accounting — 4 Credits

Process cost system, inventories, spoilage, factory ledger, special journals.

4 Class Hours

Prerequisite: BU 207 Cost Accounting

BU 210 Cost Accounting — 4 Credits

Direct costing, payroll, capital budgeting and non-manufacturing costs.

4 Class Hours

Prerequisite: BU 208 Cost Accounting

BU 211 Accounting Seminar — 4 Credits

An in-depth treatment of accounting for income taxes and payroll taxes. The concepts of conservatism, realization, going concern. Current vs. historical costs, current trends in accounting for leases, research and development costs, inventory pricing, depreciation disclosure.

4 Class Hours

Prerequisite: BU 103 Accounting

BU 212 Financing Information Systems — 3 Credits

The development of practicable accounting systems which will provide the information required for effective managerial control. To this end the techniques of flow charting, developing written procedures, analysis of organizational structures and form design will be applied to the basic areas of business.

2 Class Hours, 2 Laboratory Hours

Prerequisites:

BU 101 Accounting and BU 130 Introduction to Electronic Data Processing

BU 221 Computer Programming—Fortran — 3 Credits

Historical development of computers together with an introduction to data processing systems. The Fortran language and an introduction to machine language. An introduction to binary and other base numbering systems, flow diagramming, scaling, techniques of program checking and error analysis.

Applied theory in the laboratory by programming solutions to business problems using the Fortran language.

2 Class Hours, 2 Laboratory Hours

Prerequisite: BU 130 Introduction to Electronic Data Processing

BU 223 Internal Auditing — 4 Credits

Internal auditing is an independent appraisal activity within an organization for the review of accounting, financial and other operations as a basis for service to management. It is a managerial control, which functions by measuring and evaluating the effectiveness of other controls.

4 Class Hours

Prerequisite: BU 103 Accounting

BU 242 Computer Programming—COBOL — 3 Credits

Review of fundamental concepts of stored-program computers. Programming theory and logic applied to the solution of data processing problems accomplished by the preparation and execution of COBOL language. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: BU 130 Introduction to Electronic Data Processing

BU 251 Office Management — 3 Credits

The concept of planning, directing, controlling and actuating office work through systems, layouts, personnel control and the selection of equipment. **3 Class Hours**

BU 252 Business Report Writing — 3 Credits

Training in logical analysis of business case problems, applied to the preparation of accurate written reports. Methods and skills used in formal and informal business writing. Preparation of tables, charts, reference citations and bibliographies. **3 Class Hours**

Prerequisite: BU 151 Business English

BU 253 Personnel Administration — 3 Credits

Techniques and methods used to achieve utilization of manpower in business through proper selection, placement, training, job evaluation, wage setting, employee relations.

3 Class Hours

BU 255 Principles of Management — 3 Credits

An introductory course in the principles of managerial practices. A functional approach explaining planning, organizing, directing and controlling and their role as principles of management.

3 Class Hours

BU 287 Salesmanship — 4 Credits

The principles of sales with practical applications. Prospecting, product and service analysis, meeting objections, demonstrating, sales psychology, preparation of sales presentations.

4 Class Hours

BU 288 Advertising — 3 Credits

Development, economics, functions of advertising. Cost and application, the various media, testing and research utilization.

3 Class Hours

Prerequisite: BU 292 Marketing

BU 289 Management: A Behavioral Approach — 3 Credits

A comparative analysis of managerial theories and an integration of selected social sciences to investigate organizational problems related to managerial functions. Communications, decision-making, control theory. The impact of the organizational environment upon human behavior.

3 Class Hours

BU 291 Sales Management — 3 Credits

Development of control techniques in the administration of sales forces. Incentive systems, territory planning, development of sales potentials, personnel problems peculiar to this field.

3 Class Hours

Prerequisite: BU 142 Business Statistics

BU 292 Marketing — 3 Credits

The distributive phase of economics, from the time a good or service is produced up to the point of consumption. Marketing functions, classification of goods and of markets, marketing channels and agents in each. Lectures, discussions, case problems. **3 Class Hours**

BU 294 Advertising — 4 Credits

Detailed development of advertisements, copy and layout, method and problems of reproduction. Planning the advertising campaign with step-by-step development. Lectures, demonstrations, field trips.

4 Class Hours

Prerequisite: BU 288 Advertising

BU 295 Marketing Research — 3 Credits

Methods of collecting and interpreting marketing information. Specific applications to problems in market development, market potential, sales management. Case studies.

3 Class Hours

Prerequisites: BU 142 Business Statistics and BU 298 Marketing

BU 296 Credit — 3 Credits

Types of credit, credit department organization, credit reports and information, credit risk factors, collection procedures, analysis of financial statements.

3 Class Hours

Prerequisite: BU 102 Accounting

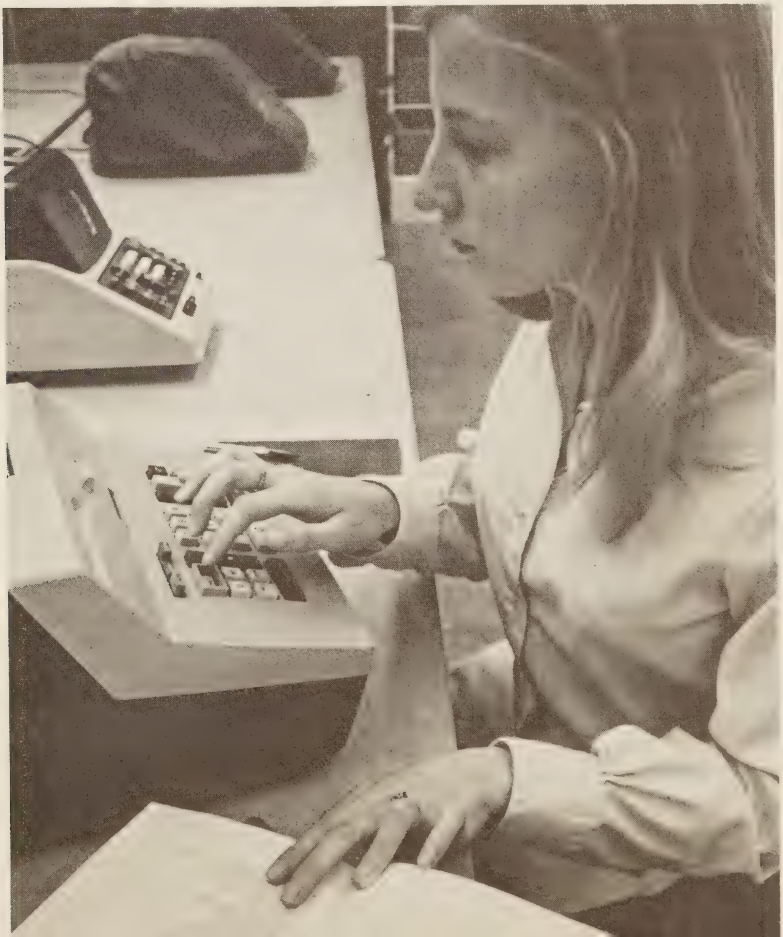
BU 297 Marketing Management — 3 Credits

Analysis of problems and activities in managing the marketing responsibility of manufacturing and wholesaling firms. Study of formulation of product, brand, distribution, pricing policies and their applications.

3 Class Hours

Prerequisite: BU 298 Marketing

Student running a cost analysis on a desk calculator in a Computing Laboratory.



BU 298 Marketing — 3 Credits

Continuation of BU 292 Marketing. Application of fundamental precepts established in the basic course. Detailed study of the functional analysis of institutions and marketing costs. Relationship to advertising and sales promotion. Advanced marketing philosophy. Lectures and discussions with emphasis on case problems.

3 Class Hours

Prerequisite: BU 292 Marketing

BU 299 Retailing — 3 Credits

Fundamentals of purchasing, merchandising, pricing, promotion. Principles of retail management. Coordination of accounting and basic marketing concepts at the market focal point.

3 Class Hours

Prerequisite: BU 292 Marketing

BU 300 Purchasing — 3 Credits

Analytical approach to techniques employed in the purchasing phase of marketing. Emphasis on the organization of the purchasing function with respect to procedures, forms and records needed to carry out procurement activities.

3 Class Hours

Prerequisites: BU 101 Accounting and BU 292 Marketing or equivalent

Secretarial Sciences

BU 161 Typewriting — 2 Credits

A beginning sequence in touch typewriting to make the operator accurate, rhythmical and moderately rapid in the operation of the typewriter. Development of correct procedures in care and use of machine. Projects include simple business letters, tabulations, manuscripts, building of typewriting speed.

5 Laboratory Hours

BU 162 Typewriting — 2 Credits

Development of proficiency of techniques in production typing of business letters, tabulations and miscellaneous business forms.

5 Laboratory Hours

Prerequisite: BU 161 Typewriting or equivalent

BU 163 Typewriting — 3 Credits

Continuation of basic skill building with emphasis on speed and accuracy in production typing of advanced materials, such as rough drafts, complicated tabulations, manuscripts, legal papers and specifications.

2 Class Hours, 3 Laboratory Hours

Prerequisite: BU 162 Typewriting

BU 164 Shorthand — 3 Credits

A beginning course in Gregg Shorthand, Diamond Jubilee System. Basic principles to promote the ability to read fluently from plates and notes. Longhand transcription from shorthand notes dictated from familiar material at a minimum rate of 50 words per minute.

2 Class Hours, 3 Laboratory Hours

BU 165 Shorthand — 3 Credits

Emphasis on shorthand writing ability at sustained speeds. Transcription at the typewriter from shorthand notes dictated from non-previewed materials at a minimum rate of 60 words per minute.

2 Class Hours, 3 Laboratory Hours

Prerequisites: BU 161 Typewriting or equivalent and BU 164 Shorthand or equivalent

BU 166 Shorthand — 3 Credits

Emphasis on speed in shorthand writing. Transcription at the typewriter from shorthand notes dictated from non-previewed materials at a minimum rate of 70 words per minute.

2 Class Hours, 3 Laboratory Hours

Prerequisites: BU 162 Typewriting and BU 165 Shorthand and BU 167 Transcription

BU 167 Transcription — 3 Credits

Development of skill in producing mailable transcripts at the typewriter from the student's shorthand notes. Emphasis on the correct use of grammar, spelling, punctuation, capitalization, vocabulary, numbers.

2 Class Hours, 3 Laboratory Hours

Prerequisites: BU 161 Typewriting or equivalent and BU 164 Shorthand or equivalent

BU 260 Engineering Shorthand — 3 Credits

Emphasis on increasing knowledge of basic information and vocabulary, with dictation and transcription of specialized material from selected areas of engineering and scientific research.

2 Class Hours, 3 Laboratory Hours

Prerequisites: BU 163 Typewriting and BU 166 Shorthand

BU 261 Engineering Shorthand — 3 Credits

Continued emphasis on increasing knowledge of basic information and vocabulary, with dictation and transcription of specialized material from selected areas of engineering and scientific research.

2 Class Hours, 3 Laboratory Hours

Prerequisite: BU 260 Engineering Shorthand

BU 263 Technical Typewriting — 3 Credits

Specialized training in understanding the correct procedures in preparing typewritten technical materials. Emphasis on typing equations, formulas, laboratory reports.

2 Class Hours, 3 Laboratory Hours

Prerequisite: BU 260 Engineering Shorthand

BU 270 Executive Shorthand — 3 Credits

Emphasis on increasing knowledge of basic information and vocabulary, with dictation and transcription of specialized material from the fields of finance and real estate.

2 Class Hours, 3 Laboratory Hours

Prerequisites: BU 163 Typewriting and BU 166 Shorthand

BU 271 Executive Shorthand — 3 Credits

Emphasis on increasing knowledge of basic information and vocabulary, with dictation and transcription of specialized material from the fields of law and insurance.

2 Class Hours, 3 Laboratory Hours

Prerequisite: BU 270 Executive Shorthand

BU 276 Medical Typewriting — 3 Credits

Development of speed and accuracy at the typewriter in preparing medical forms and other papers recorded by doctors and hospitals.

2 Class Hours, 3 Laboratory Hours

Prerequisites: BU 162 Typewriting and MR 103 Terms and Transcription

BU 277 Advanced Medical Transcription — 3 Credits

Development of advanced medical transcription techniques at the typewriter through the use of electronically recorded histories and physicals, discharge summaries, consultation reports, operative notes, out-patient reports, minutes of meetings.

2 Class Hours, 3 Laboratory Hours

Prerequisite: BU 276 Medical Typewriting

BU 280 Speed Shorthand — 3 Credits

Introduction of special short cuts to increase efficiency in taking dictation at higher speeds. Dictation of a variety of materials from 100 to 160 words per minute.

2 Class Hours, 3 Laboratory Hours

Prerequisite: BU 261 Engineering Shorthand or BU 271 Executive Shorthand

BU 284 Medical Office Accounting — 3 Credits

The useful application of record-keeping, beginning with the basic accounting concepts and utilizing the practical transitions through the entire accounting cycle. Emphasis on the books of entry and their application in preparing various accounting statements used in a medical office. For Medical Office Assistant students.

2 Class Hours, 3 Laboratory Hours

BU 310 Office Practice — 2 Credits

Practical experiences in the operation of calculating, duplicating and transcribing machines.

4 Laboratory Hours

Prerequisites: BU 163 Typewriting and BU 167 Transcription

BU 311 Office Practice — 2 Credits

Continued development of office machines operation.

4 Laboratory Hours

Prerequisite: BU 310 Office Practice

BU 312 Secretarial Procedures — 3 Credits

A study of the business activities as related to the secretarial profession. Word processing, postal and shipping services, telephone procedures, travel arrangements, planning meetings, banking services. Through the case study approach, students are able to evaluate their individual attitudes and their decision-making processes.

3 Class Hours

Prerequisites: BU 163 Typewriting and BU 167 Transcription

BU 313 Secretarial Procedures — 2 Credits

A study of records management. The useful application of filing procedures in business activities.

2 Class Hours

Prerequisite: BU 312 Secretarial Procedures

CHEMISTRY

CH 101 Chemistry — 4 Credits

Fundamental concepts of inorganic chemistry including composition of substances, kinetic and molecular theories, atomic structure and bonding, solutions and colloids, ions in solution and introduction to organic chemistry. For Dental Hygiene, Medical Record Technology, Medical Office Assistant and Nursing students.

3 Class Hours, 2 Laboratory Hours

CH 102 Chemistry — 4 Credits

A continuation of organic chemistry and fundamental concepts of biological chemistry including proteins, fats, carbohydrates and their role in metabolism. Also a chemical consideration of vitamins, hormones, enzymes and the fluids of the body. For Dental Hygiene, Medical Record Technology, Medical Office Assistant and Nursing students.

3 Class Hours, 2 Laboratory Hours

CH 104 Chemistry — 4 Credits

Basic laws, principles and theories of chemistry. Structure of matter, periodicity, chemical action, states of matter and solutions, elements of organic chemistry. For Civil and Mechanical Technology and Engineering Secretarial students.

3 Class Hours, 2 Laboratory Hours

CH 121 Chemistry — 4 Credits

Fundamental concepts of inorganic chemistry, including composition of substances, kinetic and molecular theories, atomic structure and bonding, solutions and ionization of acids, bases and salts. For Medical Laboratory Technology students.

3 Class Hours, 3 Laboratory Hours

CH 122 Chemistry — 4 Credits

Coordination chemistry, oxidation reduction and electrochemistry, the colloidal state, complex equilibrium. These concepts are applied by study of qualitative cation analysis in the laboratory. For Medical Laboratory Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisites: CH 121 Chemistry and MA 101 Mathematics

CH 123 Chemistry — 4 Credits

Continuation of CH 122 Chemistry to include theory and laboratory in volumetric and gravimetric analysis. For Medical Laboratory Technology students.

3 Class House, 3 Laboratory Hours
Prerequisite: CH 122 Chemistry

CH 132 General Chemistry — 4 Credits

Fundamental principles, laws and theories of chemistry relating to simple atomic and molecular structure, periodicity, bonding, stoichiometric relationship, states of matter, water. For Liberal Arts non-science majors and Environmental Health Technology students.

3 Class Hours, 3 Laboratory Hours

CH 133 General Chemistry — 4 Credits

A continuation of CH 132 General Chemistry. Solutions, ionization and electrolytes, acids, bases and salts, pH, colloids, equilibrium. For Liberal Arts non-science majors and Environmental Health Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CH 132 General Chemistry

CH 134 General Chemistry — 4 Credits

A continuation of CH 133 General Chemistry. Basic concepts of organic and nuclear chemistry, descriptive chemistry of some common elements. For Liberal Arts non-science majors and Environmental Health Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CH 133 General Chemistry

CH 135 Chemistry — 4 Credits

Fundamental principles and laws underlying chemical action, their integration with the theories of atomic structure and chemical bonding, and correlation with the position of the elements on the periodic table. Atomic structure, the periodic table, chemical bonding, water, the states of matter, stoichiometric calculations. For Liberal Arts science majors and Engineering Science students.

3 Class Hours, 3 Laboratory Hours

CH 136 Chemistry — 4 Credits

Continuation of CH 135 Chemistry. Solutions, oxidation-reduction, ionization and electrolysis, acids, bases and salts, chemical equilibrium and coordination compounds. For Liberal Arts science majors and Engineering Science students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CH 135 Chemistry

CH 137 Chemistry — 4 Credits

Ionization constants, solubility products and equilibrium constants. Laboratory work includes the detection and identification of the more important cations and anions including work on the analysis of mixtures. For Liberal Arts science majors and Engineering Science students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CH 136 Chemistry

CH 220 Organic Chemistry — 5 Credits

First quarter of a year's study in depth of the various functional groups of organic compounds. Emphasis on structures, reactions, reaction mechanisms, spectroscopic methods of analysis.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 123 Chemistry or 1 full year of General Chemistry

CH 221 Organic Chemistry — 5 Credits

Continuation of CH 220 Organic Chemistry.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 220 Organic Chemistry

CH 222 Organic Chemistry — 5 Credits

Continuation of CH 221 Organic Chemistry.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 220 Organic Chemistry

CH 224 Organic Chemistry — 4 Credits

A brief, fundamental treatment of modern organic chemistry. Emphasis on nomenclature, properties of selected functional groups, mechanisms, stereochemisty, synthetic methods and spectroscopy. The laboratory stresses basic techniques of purification and separation.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CH 123 Chemistry

CH 225 Organic Chemistry — 3 Credits

A continuation of CH 224 Organic Chemistry which includes such topics as aldehydes and ketones, carboxylic acids and their derivatives, fats, oils and waxes, amines and diazonium compounds, spectroscopy and organic structures, optical isomerism, carbohydrates, amino acids and proteins. The laboratory will emphasize synthetic techniques.

2 Class Hours, 3 Laboratory Hours
Prerequisite: CH 224 Organic Chemistry

CH 226 Instrumental Analysis — 5 Credits

Theory and laboratory instruction in electrochemical methods of analysis, including potentiometry, polarography, coulometry, conductimetry and radio-chemistry. For Medical Laboratory Technology students.

2 Class Hours, 6 Laboratory Hours
Prerequisite: CH 123 Chemistry

CH 227 Instrumental Analysis — 5 Credits

Instrumental methods of analytical chemistry, primarily optical methods. Laboratory work in visible, ultraviolet and infrared spectrophotometry. Column, paper, thin layer, ion exchange, gas chromatography. Chemical microscopy, emission spectroscopy, electrophoresis. For Medical Laboratory Technology students.

3 Class Hours, 5 Laboratory Hours
Prerequisite: CH 224 Organic Chemistry

CH 228 Analytical Chemistry — 5 Credits

Principles and techniques of modern quantitative chemical analysis including gravimetric and volumetric analysis, introduction to elementary instrumental methods, statistical interpretation of analytical data. Laboratory work includes analysis of samples for inorganic and organic compounds.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 123 Chemistry

CH 241 Quantitative Analysis — 5 Credits

Continuation of CH 112 Chemistry with emphasis on the application of physical and chemical theory to the more important gravimetric, volumetric and elementary instrumental methods of analysis. Laboratory work requires statistical treatment of analytical data and the practical application of computer programming for quantitative analysis.

3 Class Hours, 6 Laboratory Hours
Prerequisite: CH 112 Chemistry

Students working on an experiment in the General Chemistry Laboratory.

CH 251 Organic Chemistry — 5 Credits

A fundamental treatment of organic chemistry. Emphasis on nomenclature, properties of selected functional groups, mechanisms, stereochemistry, synthetic methods and spectroscopy. The laboratory stresses basic techniques of reactions, separation, purification and isolation by classical methods as well as modern instrumental techniques.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 134 Chemistry or CH 137 Chemistry

CH 252 Organic Chemistry — 5 Credits

A continuation of CH 251 Organic Chemistry with an emphasis on aromatic character, electrophilic substitution, spectroscopy, alcohols, nucleophilic substitution, ethers and carboxylic acids and their derivatives.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 251 Organic Chemistry

CH 253 Organic Chemistry — 5 Credits

A continuation of CH 252 Organic Chemistry. Fundamental treatment of amines, diazonium salts, aldehydes and ketones, carbanions and important biological molecules such as carbohydrates, amino acids, proteins and nucleic acids. The laboratory emphasizes multistep synthesis and qualitative organic analysis.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 252 Organic Chemistry

CH 260 Stoichiometry — 4 Credits

A first course in chemical engineering background. Application of chemistry, physics and mathematics in solving engineering problems. Special emphasis on dealing with material and energy balances and the solution of problems. For Chemical Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisites: CH 112 Chemistry and MA 140 College Algebra and Trigonometry

CH 265 Chemical Processes — 5 Credits

Basic definitions and computations including slide rule. Systems of units, data collection and analysis. Graphical construction and interpretation. Quantitative chemical problem analysis.

3 Class Hours, 4 Laboratory Hours
Prerequisites: CH 123 Chemistry and MA 140 College Algebra and Trigonometry or CS 112 Elements of Technical Mathematics

CH 266 Chemical Processes — 5 Credits

Behavior of gases and vapors, material balances, energy balances and thermochemistry.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 265 Chemical Processes

CH 267 Chemical Processes — 5 Credits

Phase diagrams, separation processes, graphical and analytical solution of process problems.

3 Class Hours, 4 Laboratory Hours
Prerequisite: CH 265 Chemical Processes

CIVIL TECHNOLOGY

CT 110 Architectural Drawing — 1 Credit

Development of working drawings for residential construction, including floor plans, elevations, sections, details, mechanical and electrical layouts.

3 Laboratory Hours
Prerequisite: MT 110 Engineering Drawing

CT 119 Plain Concrete — 3 Credits

A study of cements, aggregates and plain concrete, including the testing of cements and aggregates, the design, mixing, testing, placing, curing control and inspection of plain concrete. ASTM and AASHO standards. **2 Class Hours, 3 Laboratory Hours**

CT 140 Surveying — 5 Credits

Plane surveying including distance measurement, note keeping, compass surveying, leveling, angle measurement, care and use of instruments, stadia searching and deed descriptions, traversing, coordinates, area computation.

3 Class Hours, 6 Laboratory Hours
Prerequisite: MA 140 College Algebra and Trigonometry

CT 141 Surveying — 4 Credits

Continuation of CT 140 Surveying, including observation of meridian, triangulation, land surveys, horizontal and vertical control, photogrammetry, mapping.

2 Class Hours, 6 Laboratory Hours
Prerequisite: CT 140 Surveying

CT 153 Strength of Materials — 4 Credits

Study of stress and strain, elasticity, shear and moment in beams, stresses in beams, torsion, combined stresses, mechanical properties of structural materials. Laboratory work includes mechanical tests on wood, concrete and metals.

3 Class Hours, 3 Laboratory Hours
Prerequisites: MT 155 Applied Mechanics and MA 141 Calculus

CT 211 Architectural Drawing — 1 Credit

Continuation of CT 110 Architectural Drawing including cabinet details, plot plans and architectural rendering. Emphasis on the development of perspective drawings.

3 Laboratory Hours
Prerequisite: CT 110 Architectural Drawing

CT 212 Architectural Drawing — 1 Credit

Development of a set of working drawings for a small commercial building including floor plans, elevations, sections, details, mechanical and electrical layouts, window and door schedules. Term project. **3 Laboratory Hours**

Prerequisite: CT 211 Architectural Drawing

CT 220 Reinforced Concrete Design — 4 Credits

Fundamental behavior of reinforced concrete. Design, analysis and detailing of rectangular beams, T-beams, beams reinforced for compression, columns and footings. Major emphasis on ultimate strength design methods. An integrated design and detailing project.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CT 254 Strength of Materials

CT 221 Structural Steel Design — 4 Credits

Fundamental theory and principles necessary for design of simple steel structures. Design, investigation and detailing of beams, columns, tension and compression members and their connections. Composite beams. An integrated design and detailing project.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CT 254 Strength of Materials

CT 230 Building Design — 4 Credits

Building materials, manufacturing processes and construction methods. Application of architectural design principles to institutional type buildings. Term project.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CT 212 Architectural Drawing

CT 250 Estimating and Construction Planning — 4 Credits

A systematic approach to estimating building project costs combined with a study of construction management and the critical path method of scheduling.

3 Class Hours, 3 Laboratory Hours
Prerequisite: CT 212 Architectural Drawing or permission of instructor

CT 254 Strength of Materials — 3 Credits

A continuation of CT 153 Strength of Materials including deflection of beams. Analysis of statically indeterminate beams, restrained and continuous. Columns, selected topics.

3 Class Hours
Prerequisite: CT 153 Strength of Materials

Civil Technology students doing a hydrometer analysis of soils in the Soils Laboratory.

CT 260 Hydraulics — 3 Credits

Basic course in hydraulics including properties of fluids, hydrostatics, fluid motion flow in or through orifices, nozzles, pipes, weirs, open channels, hydraulic machinery, and application and limitations of selected design aids.

3 Class Hours

Prerequisites: MA 141 Calculus and MT 155 Applied Mechanics

CT 270 Soil Mechanics — 4 Credits

Origin and nature of soil, soil density, sampling, soil water, flow nets and seepage forces. Classification, frost action, stabilization, stress, consolidation, settlement, shearing strength, stability, embankments, dams, retaining walls, piles and underground conduits. The laboratory covers ASTM and AASHO specifications used in classifying and predicting behavior of soils.

3 Class Hours, 3 Laboratory Hours

Prerequisite: CT 153 Strength of Materials

CT 273 Environmental Sanitation — 4 Credits

Environmental sanitation including water supplies and treatment, sewerage and sewage treatment, unit operations and refuse sanitation. Laboratories include field trips, design problems in plants, distribution and collection systems.

3 Class Hours, 3 Laboratory Hours

CT 274 Environmental Sanitation — 3 Credits

Communicable diseases, biological and chemical aspects of water and sewage treatment, air pollution and industrial wastes.

2 Class Hours, 3 Laboratory Hours

Prerequisite: CH 104 Chemistry

CT 283 Route Surveying and Highway Design — 4 Credits

Simple and compound curves, vertical curves, spirals and earthwork. Seelcted topics in route selection, field technique, route design, construction and maintenance. Computer applications. Term project.

3 Class Hours, 3 Laboratory Hours

Prerequisites: CT 140 Surveying and MA 141 Calculus

DENTAL HYGIENE

DH 100 Dental Hygiene and Ethics — 2 Credits

History of dental hygiene. Ethical practice, dental jurisprudence, proper oral hygiene technique.

2 Class Hours

DH 101 Dental Manikin Practice — 3 Credits

Removal of simulated deposits and accretions on the teeth of manikins by use of dental instruments. Proper scaling and polishing techniques, tooth-brushing and general mouth cleanliness are stressed.

1 Class Hour, 4 Laboratory Hours

Prerequisite: DH 140 Oral Anatomy

DH 103 Clinical Dental Hygiene — 2 Credits

Clinical application of DH 101 Dental Manikin Practice.

1 Class Hour, 3 Laboratory Hours

Prerequisite: DH 141 Oral Anatomy

DH 140 Oral Anatomy — 3 Credits

Gross anatomy and mormal functions of the teeth, tissue and organs of the oral cavity.

2 Class Hours, 2 Laboratory Hours

DH 141 Oral Anatomy — 3 Credits

Continuation of DH 140 Oral Anatomy.

2 Class Hours, 2 Laboratory Hours
Prerequisite: DH 140 Oral Anatomy

DH 158 Dental Office Practice — 3 Credits

General dental office procedures, psychology of patient relations, dental assisting and operating room procedure, and the importance to the dental hygienist of being a member of the dental health team.

2 Class Hours, 2 Laboratory Hours

DH 204, 205, 206 Clinical Dental Hygiene — 4, 4, 4 Credits

Dental prophylaxis performed on patients, oral observation and inspection, topical application of fluorides, and chairside home care instructions given to patients. Practice in dental assisting, sterilizing techniques, use of cavitron, instrument sharpening, transillumination, charting, completing medical and dental histories. Use and maintenance of dental unit. Off-campus dental office experience in assisting and observation.

1 Class Hour, 12 Laboratory Hours each
Prerequisites: All Dental Hygiene and Biology courses in terms 1, 2 and 3 for DH 204
DH 204 Clinical Dental Hygiene for DH 205
DH 205 Clinical Dental Hygiene for DH 206

DH 244 Preventive Dentistry — 3 Credits

Preventive methods for maintaining the health of the mouth and control of dental caries. Detailed studies of the latest methods of caries control through laboratory tests, diet and fluoridation. Study of teeth not in normal occlusion, classification and probable factors causing orthodontic conditions. Introduction to abnormal oral conditions found in children, with possible methods of treatment or correction.

3 Class Hours
Prerequisites: DH 141 Oral Anatomy and DH 101 Dental Manikin Practice

DH 251 Dental Radiography — 2 Credits

Proper use of the X-ray machine and accessories. Exposure, development and mounting of dental films. Procedures to safeguard the patient and operator from hazards of radiation. Understanding the use of X-ray in clinical practice of dentistry.

1 Class Hour, 2 Laboratory Hours
Prerequisite: DH 141 Oral Anatomy

DH 252 Clinical Dental Radiography — 1 Credit

Clinical application of principles and practices learned in DH 251 Dental Radiography.

2 Laboratory Hours
Prerequisite: DH 251 Dental Radiography

DH 253 Clinical Dental Radiography — 1 Credit

Continuation of DH 252 Clinical Dental Radiography.

2 Laboratory Hours
Prerequisite: DH 252 Clinical Dental Radiography

DH 254 General and Oral Pathology — 2 Credits

A broad picture of the disease process through a study of common general diseases, their causes, results, treatment. Emphasis on the principles of inflammation, healing and repair.

2 Class Hours
Prerequisites: BI 159 Microbiology and BI 176 Dental Histology
and BI 172 Anatomy and Physiology

DH 255 General and Oral Pathology — 2 Credits

Oral diseases, their causes, recognition and treatment, with particular emphasis on the application of the principles covered in DH 254 General and Oral Pathology.

2 Class Hours
Prerequisite: DH 254 General and Oral Pathology

DH 260 Dental Laboratory Practice — 3 Credits

An introduction to the restorative phase of dentistry. Dental laboratory procedures by lectures, demonstrations and actual processing of laboratory projects by students. History, property and use of various dental laboratory materials.

2 Class Hours, 2 Laboratory Hours
Prerequisite: DH 141 Oral Anatomy

DH 261 Nutrition — 3 Credits

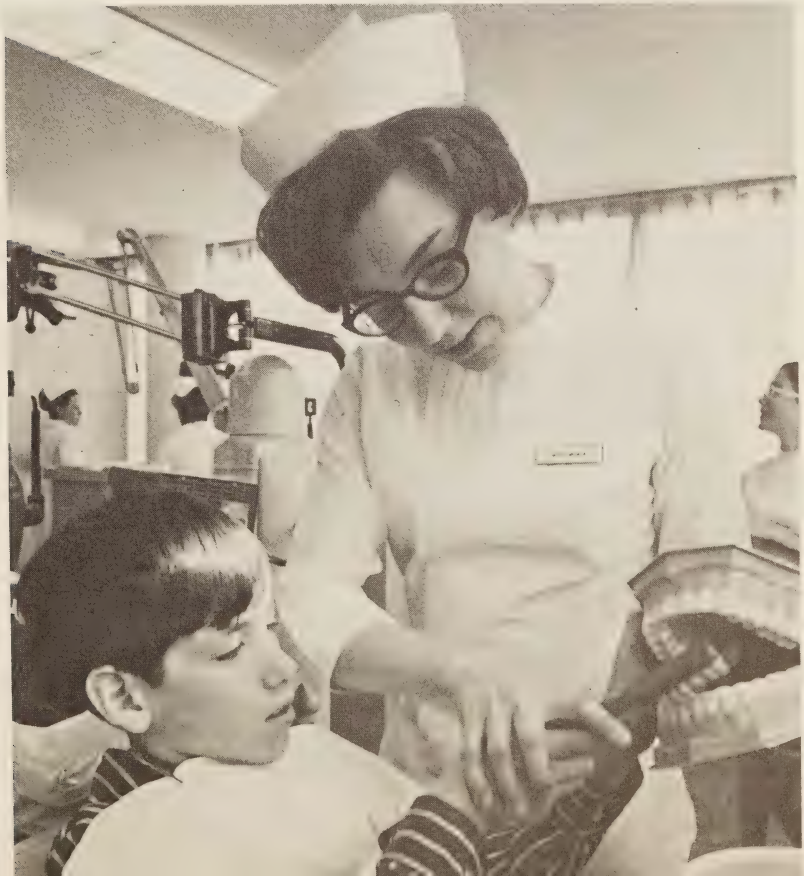
Basic nutrition, essential nutrients, requirements and recommended allowances. The role of dietary intake in an individual's dental health. **3 Class Hours**

DH 267 Anesthesia — 2 Credits

Principles of general and local anesthetics and patient management.

2 Class Hours
Prerequisites: All preceding DH and BI courses in Terms 1, 2, 3 and 4

Dental Hygiene student instructing a young patient in proper tooth-brushing technique in the Dr. James T. Ivory Dental Hygiene Clinic.



DH 268 Special Dental Practice — 3 Credits

Various specialty practices in dentistry: periodontia, prosthetics, orthodontics, endodontics, exodontics, oral surgery and maxio-facial surgery. Nature, procedure, differences in types of practices and the role of the dental hygienist in each practice.

3 Class Hours

Prerequisites: All preceding DH and BI courses in Terms 1, 2, 3, 4 and 5

DH 283 Dental Health Education — 3 Credits

Areas and principles for patient instruction in professional and personal care procedures.

3 Class Hours

Prerequisites: DH 141 Oral Anatomy and DH 103 Clinical Dental Hygiene and BI 159 Microbiology

DH 284 Dental Pharmacology — 3 Credits

The action of drugs, their sources, properties, preparation, administration. The mathematics of pharmacy and prescription writing. Therapy of oral conditions.

3 Class Hours

Prerequisites: BI 172 Anatomy and Physiology and BI 159 Microbiology

DH 287 Public Health — 2 Credits

An over-all picture of public health (history, philosophy, environmental sanitation, structure, services) with emphasis on community dental health. Off-campus projects.

2 Class Hours

ENVIRONMENTAL HEALTH TECHNOLOGY

EH 112 Environmental Health — 2 Credits

An introduction to environmental health including the principles of environmental disease control and their application to the environment.

2 Class Hours

EH 201 Atmospheric Pollution Control — 4 Credits

Air pollution in relation to public health. Sources and classification of pollutants, pollution meteorology, sampling and measuring techniques, principles and methods employed in control.

3 Class Hours, 3 Laboratory Hours

EH 202 Community Sanitation — 4 Credits

Urban environmental health problems including refuse sanitation and disposal methods, rodent identification and control methods, principles of healthful housing and housing codes.

3 Class Hours, 3 Laboratory Hours

EH 204 Water Supply and Pollution Control — 4 Credits

Development, treatment, distribution of water supplies including development and protection of water sources, principles and methods of water treatment, treatment plant operation and maintenance.

3 Class Hours, 3 Laboratory Hours

Prerequisite: BI 106 Limnology

EH 205 Water Supply and Pollution Control — 4 Credits

Collection, treatment, disposal of liquid wastes including composition of sanitary and industrial wastes, principles and methods of treatment and disposal, treatment plant operation and maintenance.

3 Class Hours, 3 Laboratory Hours

Prerequisite: EH 204 Water Supply and Pollution Control

EH 208 Environmental Health Administration — 3 Credits

Organization, programs and services of public health departments, including the historical and legal aspects of public health activities. Fundamentals of effective public relations.

2 Class Hours, 2 Laboratory Hours

EH 209 Milk and Food Sanitation — 4 Credits

Sanitation in the production, processing, storage, distribution and serving of milk and foods including regulations and inspection procedures.

3 Class Hours, 3 Laboratory Hours

EH 210 Radiologic Health — 4 Credits

Sources and characteristics of radiation including X-ray generating equipment, principles of radiation biology and radiation protection, radiation regulations and inspection procedures.

3 Class Hours, 3 Laboratory Hours

ELECTRICAL TECHNOLOGY

ET 101, 102, 103 Electrical Shop — 2, 2, 1 Credits

A sequence of three courses to familiarize the student with general electrical trade practices and the acquiring of limited basic manipulative skills. Experience in the installation, fabrication and maintenance of electrical equipment. Training in the different electrical circuits used in wiring systems as found in residential and industrial troubleshooting and repair of electrical equipment. Study and practice of fabrication methods, basic manufacturing processes and shop safety practices used in the electrical industry.

1 Class Hour, 3 Laboratory Hours for ET 101
1 Class Hour, 3 Laboratory Hours for ET 102
3 Laboratory Hours for ET 103
Prerequisites: ET 101 Electrical Shop for ET 102
ET 102 Electrical Shop for ET 103

ET 113 Electricity and Magnetism — 4 Credits

Characteristics of electrical and electronic circuits founded upon electric and magnetic field concepts.

3 Class Hours, 3 Laboratory Hours
Prerequisite: PH 143 Physics

ET 120 Electrical Circuits — 5 Credits

Fundamentals of electrical circuits and application of circuit laws, theorems and measuring techniques.

4 Class Hours, 3 Laboratory Hours

ET 121 Electrical Circuits — 5 Credits

Continuation of ET 120 Electrical Circuits emphasizing single phase and polyphase circuits.

4 Class Hours, 3 Laboratory Hours
Prerequisite: ET 120 Electrical Circuits

ET 127 Electricity — 4 Credits

Beginning of a two-term sequence of applied electrical concepts emphasizing DC circuitry and an introduction to electrical machinery. For Mechanical Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: PH 145 Physics

ET 128 Electricity — 4 Credits

A continuation of ET 127 Electricity with emphasis on AC circuitry, measurements, power distribution, transformers and AC machines. For Mechanical Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: ET 127 Electricity

ET 129 Electronics — 4 Credits

An applied electronics course with related laboratory experiments. An introduction to the theory and operation of electronic components, with emphasis on their applications. For Mechanical Technology students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: ET 128 Electricity

ET 130 Engineering Drawing — 1 Credit

Principles of parallel projection. Development of drafting skills to include lettering and proper line construction.

3 Laboratory Hours

ET 131 Engineering Drawing — 1 Credit

Shop processes and procedures to facilitate the understanding of drafting practices. Tolerancing, representation of threads and fasteners, preparation of assembly drawings.

3 Laboratory Hours
Prerequisite: ET 130 Engineering Drawing

ET 141 Electricity — 3 Credits

Basic course in applied electricity as related to the construction industry. Distribution systems, lighting system, heating, motors, generators. Laboratory includes general trade practices, National Electrical Code and safety. For Civil Technology students.

2 Class Hours, 3 Laboratory Hours
Prerequisite: MA 140 College Algebra and Trigonometry

ET 223 Network Analysis — 4 Credits

Analysis of complex electrical and electronic networks by the application of Kirchhoff's laws, Thevenin's theorem, Norton's theorem, superposition, vector loci methods, loop and nodal analysis, transfer function techniques. The computer is used as an analytical tool where feasible.

4 Class Hours
Prerequisites: ET 121 Electrical Circuits and ET 113 Electricity and Magnetism

ET 230 Electrical Design — 1 Credit

Application of electrical drafting principles to the planning of power layout and lighting design. Manufacturers' catalogs, charts, and the National Electrical Code form essential reference material. Lists of materials and schedules are prepared as parts of each project.

3 Laboratory Hours
Prerequisite: ET 131 Engineering Drawing

ET 231 Electrical Design — 1 Credit

Application of drafting principles to electronic circuitry. Student projects include problems typical of those found in the electronics and controls areas.

3 Laboratory Hours
Prerequisites: ET 230 Electrical Design and ET 251 Electronics

ET 240 Electrical Machines — 5 Credits

Theory, operation, application of DC machines and their manual, magnetic and solid state control. Introduction to single and polyphase silicon diode and thyristor rectifiers, their design, characteristics and applications.

4 Class Hours, 3 Laboratory Hours
Prerequisites: ET 121 Electrical Circuits and
ET 113 Electricity and Magnetism

ET 241 Electrical Machines — 5 Credits

Basic theory of single phase and polyphase transformers. Principles of operation and control of AC machines and solid state inverters.

4 Class Hours, 3 Laboratory Hours
Prerequisite: ET 240 Electrical Machines

ET 242 Automatic Controls — 5 Credits

Principles of open and closed loop systems and the theory, operation, application of industrial equipment used in control systems. Associated laboratory permits examination, operation, trouble-shooting of these control devices.

4 Class Hours, 3 Laboratory Hours
Prerequisite: ET 241 Electrical Machines

ET 250 Electronics — 5 Credits

Introduction to electronic building blocks. Characteristics of semiconductor and vacuum devices. Multi-element and special types of active devices.

4 Class Hours, 3 Laboratory Hours
Prerequisites: ET 113 Electricity and Magnetism, ET 121 Electrical Circuits and MA 141 Calculus

ET 251 Electronics — 5 Credits

Use of electronic building blocks. Semiconductor and vacuum devices in functioning circuitry. Prediction and analysis of performance.

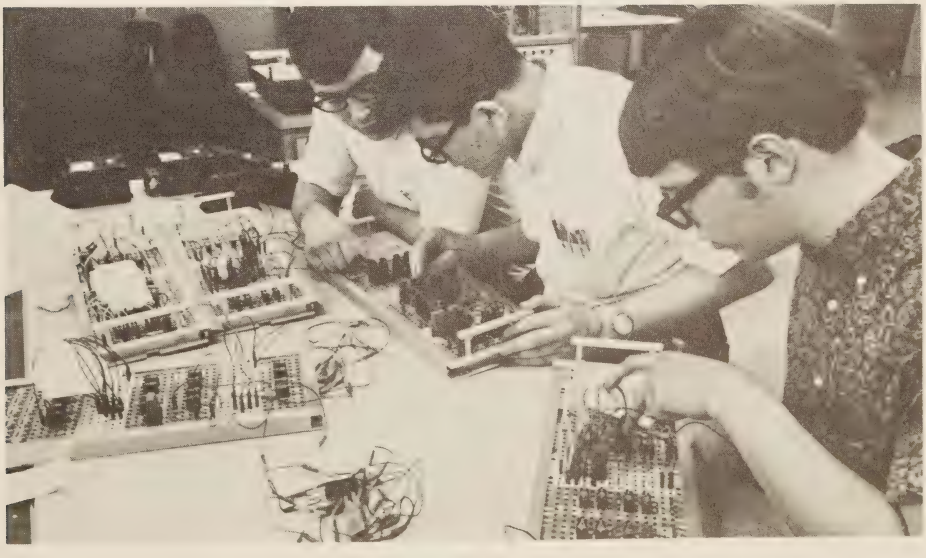
4 Class Hours, 3 Laboratory Hours
Prerequisite: ET 250 Electronics

ET 252 Electronics — 5 Credits

Behavior of large signal devices, graphical analysis, applications of feedback, sinusoidal oscillators, wave shaping, non-sinusoidal oscillators.

4 Class Hours, 3 Laboratory Hours
Prerequisite: ET 251 Electronics

Electrical Technology students composing electrical circuits for an analog computer.



ET 253 Electronics — 5 Credits

Cascaded circuits. Circuits with feedback over several stages, power supplies, counters, functional devices.

4 Class Hours, 3 Laboratory Hours
Prerequisite: ET 252 Electronics

ET 258 Introduction to System Logic — 3 Credits

Logic analysis: application to analog, digital and non-computer areas. Mathematical methods for analysis of computer logic and computer-type problems. Study of building blocks, sub-system and system operations. Periodical laboratory exercises and demonstrations. (Non-electrical and part-time students need faculty approval.)

2 Class Hours, 2 Laboratory Hours
Prerequisites: MA 142 Calculus and ET 223 Network Analysis

ET 260 Principles of Industrial Management — 3 Credits

Principles of industrial organization and management of plant and personnel. Key topics include product development, work measurement, method analysis, materials control, job analysis, descriptions and evaluation, letters of application and the interview situation.

3 Class Hours

ET 264 Microcircuits — 3 Credits

Study of the construction and processing of monolithic integrated circuits including epitaxy, diffusion, wafer processing and photo lithography. Available components, applications and limitations of microcircuits. Thin and thick film devices, testing and interpreting specifications. Economic and reliability considerations. Large scale integration concepts, systems applications, new developments.

3 Class Hours

ET 265 Principles of Solid State Devices — 2 Credits

Solid state physical principles as applied to electronic devices.

2 Class Hours
Prerequisite: ET 113 Electricity and Magnetism

LIBERAL ARTS

English

LA 130 Composition and Literature — 3 Credits

Enhancement of student's sensivity to language and provision of a sense of literary tradition through examination of eminent literature. Foundation in expository prose through formulation of opinions and interpretations in writing. Familiarization and practice with research procedures.

3 Class Hours

LA 131 Composition and Literature — 3 Credits

Critical and evaluative writing based on ideas found in poetry and prose.

3 Class Hours
Prerequisite: LA 130 Composition and Literature

LA 132 Composition and Literature — 3 Credits

Critical and evaluative writing based on ideas found in drama and prose.

3 Class Hours
Prerequisite: LA 131 Composition and Literature

LA 230 American Literature — 3 Credits

History and development of American Literature from the colonial period to the Civil War. Emphasis on several major writers of the period. For Liberal Arts students.

3 Class Hours

LA 231 American Literature — 3 Credits

History and development of American Literature from the Civil War to the early 20th century. Emphasis on several major writers of the period. For Liberal Arts students.

3 Class Hours

LA 232 American Literature — 3 Credits

History and development of American Literature during the 20th century. Emphasis on several major writers of the period. For Liberal Arts students. **3 Class Hours**

LA 233 English Literature — 3 Credits

The history and development of English literature from the Middle Ages to the 17th century. For Liberal Arts students. **3 Class Hours**

LA 234 English Literature — 3 Credits

The history and development of English literature from the 17th century to the Victorian period. For Liberal Arts students. **3 Class Hours**

LA 235 English Literature — 3 Credits

The history and development of English literature from the Victorian period to the present. For Liberal Arts students. **3 Class Hours**

LA 236 Literature of the Western World — 3 Credits

First in a three-term sequence concerned with selected materials from that body of world literature that reflects and defines the values of man. Themes of the classical world.

3 Class Hours

LA 237 Literature of the Western World — 3 Credits

Themes and counterthemes from medieval Christianity to the 19th century.

3 Class Hours

LA 238 Literature of the Western World — 3 Credits

Themes of the 19th and 20th centuries. **3 Class Hours**

LA 242 Biblical Literature — 3 Semester Credits

This course will provide for an acquisition of the skills necessary to study the Bible. Through reading and analysis the student will become familiar with the Biblical narrative and its relationship to Western culture. **4½ Class Hours**

LA 801 English — 3 Credits

Introduction to the informal study of logic and language. Use of prose to stimulate critical thinking and verbal analysis with subsequent written reaction. Study of basic reading skills to prepare student for sophisticated reading. First in a three-term (one year) offering for students in Associate in Applied Science degree programs. **3 Class Hours**

LA 802 English — 3 Credits

Style, tone and diction, and their relationship to the writer's purpose. Intensive practice in the construction of effective sentences, paragraphs and short themes. Second in a three-term (one year) offering for students in Associate in Applied Science degree programs.

3 Class Hours

Prerequisite: LA 801 English

LA 803 English — 3 Credits

Development of analytical reading, critical thinking, effective written communication. Reading of related essays, stories and poems offering a study of universal themes dealing with man, his views of self and society. Third in a three-term (one year) offering for students in Associate in Applied Science degree programs.

3 Class Hours

Prerequisite: LA 802 English

LA 806 Studies in Literature — 3 Credits

The four genres of creative literature—poetry, drama, short story and the novel. Analysis with regard to styles and characteristics of each genre as seen in representative British, Continental and American literature. Not available to Liberal Arts students without special permission from the Liberal Arts division director.

3 Class Hours

History and Government

LA 145 Development of Western Civilization — 3 Credits

Development of man from the dawn of history, through the classical civilizations of Greece and Rome, to the Middle Ages. For Liberal Arts and Business Administration students.

3 Class Hours

LA 146 Development of Western Civilization — 3 Credits

The late Middle Ages (1300) through the beginning of modern times, the age of royal absolutism, the expansion of Europe, and the era of the French Revolution to 1830. For Liberal Arts and Business Administration students.

3 Class Hours

LA 147 Development of Western Civilization — 3 Credits

The Industrial Revolution, development of nationalism, the beginning of liberalism, the growth of industrialism, the two World Wars and present-day tensions. Social and cultural trends of the period. For Liberal Arts and Business Administration students.

3 Class Hours

LA 148 United States History — 3 Credits

The United States from colony (1620) to confederation (1775) to republic (1797). The trials of putting the Constitution into practice: beginnings of political parties, increasing sectionalism, the Marshall Court, Manifest Destiny.

3 Class Hours

LA 149 United States History — 3 Credits

Sectional splits (economic, political and social) lead to Civil War and a reconstruction period that does not reconstruct. Sectionalism carries over into the gilded age as the country becomes industrialized, resulting in problems of labor-management, urbanization, populism, Social and Reform Darwinism, new Manifest Destiny.

3 Class Hours

LA 150 United States History — 3 Credits

First half of the 20th century—the age of contrasts: constant war-talk of peace, peak prosperity to deepest depression, isolation to world concern. Post World War II: a new era—domestic, social, economic and political problems intensifying, expanding role of foreign involvement.

3 Class Hours

LA 248 History of Latin America — 3 Credits

Pre-Columbian Latin America, the Spanish and Portuguese conquests and the Colonial Period. For Liberal Arts students.

3 Class Hours

LA 249 History of Latin America — 3 Credits

Latin America's wars of independence and the economic and cultural development of the 19th century. For Liberal Arts students.

3 Class Hours

LA 250 History of Latin America — 3 Credits

The major Latin American nations in the 20th century in terms of political, economic and social institutions and problems. For Liberal Arts students.

3 Class Hours

LA 251 Russian and East European History — 3 Credits

Survey of Slavic history from early settlements in Kievan Russia and Eastern Europe through major influences of Mongol and Turkish conquests, the rise of Muscovy and the House of Habsburg to the end of the reign of Peter the Great in Russia.

3 Class Hours

LA 252 Russian and East European History — 3 Credits

Major historical developments from 1825 to 1905, which include Russian expansionism, the dual monarchy of Austria-Hungary, the Ottoman Empire in Europe, the fate of Poland and the Russian Revolution of 1905.

3 Class Hours

LA 253 Russian and East European History — 3 Credits

The 20th century problems from both World Wars, the 1917 Bolshevik Revolution, formation of new East European political entities, Soviet hegemony and contemporary issues.

3 Class Hours

LA 260 Political Science — 3 Credits

Analysis of the United States governmental system, with special emphasis on the Constitution and the national governmental structure, organization and functions. For senior Liberal Arts students.

3 Class Hours

LA 261 Political Science — 3 Credits

Study of citizen politics, including a discussion of the Bill of Rights. Role of the mass media and public opinion. Political parties and pressure groups. For senior Liberal Arts students.

3 Class Hours

Prerequisite: LA 260 Political Science

LA 262 Political Science — 3 Credits

Comparative analysis of modern political thought to include a discussion of the development of liberalism, socialism, authoritarianism and the welfare state. For senior Liberal Arts students.

3 Class Hours

Prerequisite: LA 261 Political Science

LA 270 Early China and Japan — 3 Credits

An investigation of the origins of Chinese and Japanese civilization, emphasizing the influences of culture, geography and religion. The contrast to early Western development will be made in an attempt to establish the "unique mood" of pre-modern Asian society.

3 Class Hours

LA 271 Modern Japan — 3 Credits

An investigation and analysis of the history of modern Japan—beginning with the Meiji Restoration (1868) but with an emphasis on the economics and politics of Japan since 1945.

3 Class Hours

LA 272 Modern China — 3 Credits

An investigation and analysis of China in the 19th and 20th centuries, stressing the topics of Manchu decline, the rise of nationalism, the triumph of Mao and the Communist Party and the current role of the People's Republic in international politics.

3 Class Hours

Humanities

LA 101, 102, 103 Beginning Spanish — 4, 4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours, 1 Laboratory Hour each
Prerequisite: LA 101 Beginning Spanish for LA 102
LA 102 Beginning Spanish for LA 103

LA 110, 111, 112 Beginning French — 4, 4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours, 1 Laboratory Hour each
Prerequisite: LA 110 Beginning French for LA 111
LA 111 Beginning French for LA 112

LA 119, 120, 121 Beginning German — 4, 4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom and written homework assignments, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours, 1 Laboratory Hour each
Prerequisite: LA 119 Beginning German for LA 120
LA 120 Beginning German for LA 121

LA 125, 126, 127 Beginning Italian — 4, 4, 4 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading and discussion of graded literary and cultural texts.

4 Class Hours, 1 Laboratory Hour each
Prequisite: LA 125 Beginning Italian for LA 126
LA 126 Beginning Italian for LA 127

LA 193 Philosophy — 3 Credits

Methodology, the principles of deductive and inductive logic, epistemology. For Liberal Arts students.

3 Class Hours

LA 194 Philosophy — 3 Credits

The various systems of thought, including idealism, rationalism, theism, empiricism, positivism, pragmatism, scepticism, existentialism. For Liberal Arts students.

3 Class Hours

LA 195 Philosophy — 3 Credits

Ethics: moral values, rules of conduct and guides to action. Aesthetics: the science of beauty, the rules and principles of art. For Liberal Arts students.

3 Class Hours

LA 196 Humanities — 3 Credits

A critical analysis of man's development from his early beginnings through the classical and medieval periods by a thematic investigation of literature, philosophy, history and the arts.

3 Class Hours

LA 197 Humanities — 3 Credits

A critical analysis of man's development through the Renaissance, metaphysical, neo-classical and romantic periods, by continuing a thematic investigation of literature, philosophy, history and the arts.

3 Class Hours

LA 198 Humanities — 3 Credits

A critical analysis of man's development through the Victorian, early modern and late modern periods, by continuing a thematic investigation of literature, philosophy, history and the arts.

3 Class Hours

LA 204 Intermediate Spanish — 3 Credits

Intensive review and continuation of grammar and syntax. Aural comprehension and oral practice in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: LA 103 Beginning Spanish

LA 205 Intermediate Spanish — 3 Credits

Intensive and extensive reading of literary works of recognized authors. Classroom discussion based on the texts. Discussions and conversation in Spanish.

3 Class Hours
Prerequisite: LA 204 Intermediate Spanish

LA 206 Intermediate Spanish — 3 Credits

Intensive and extensive reading of literary works of recognized authors. Classroom discussion and conversation based on these texts, in the language.

3 Class Hours
Prerequisite: LA 205 Intermediate Spanish

LA 210 Main Currents of Spanish Literature — 3 Credits

Lectures on the historic background. Readings and discussions of masterpieces of Spanish literature from the **Cid** to the Golden Age. Voluntary use of audio-lingual laboratory to hear recordings of selected portions of Spanish literary works.

3 Class Hours
Prerequisite: LA 206 Intermediate Spanish

LA 211 Main Currents of Spanish Literature — 3 Credits

Lectures on the historic background. Reading, discussion and reports on representative works from the Golden Age to the present century. Voluntary use of audio-lingual laboratory.

3 Class Hours
Prerequisite: LA 210 Main Currents of Spanish Literature

LA 212 Main Currents of Spanish Literature — 3 Credits

Continued lecturing by the instructor on the historic background. Reading, discussion and reports on representative works from the generation of 1898 to contemporary times. Voluntary use of the audio-lingual laboratory.

3 Class Hours
Prerequisite: LA 211 Main Currents of Spanish Literature

LA 213 Intermediate French — 3 Credits

Reading and discussion of cultural texts. Continuation of grammar, syntax and oral practice in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: LA 112 Beginning French

LA 214 Intermediate French — 3 Credits

Intensive and extensive reading of literary works of recognized authors. Continuation of grammar, syntax and oral practice in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: LA 213 Intermediate French

LA 215 Intermediate French — 3 Credits

Emphasis on composition, with continuation of grammar, syntax and oral practice in the classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: LA 214 Intermediate French

LA 216 Masterpieces of French Prose and Poetry — 3 Credits

Readings, lectures and discussions on representative works from the Middle Ages through the Age of Classicism.

3 Class Hours
Prerequisite: LA 215 Intermediate French

LA 217 Masterpieces of French Prose and Poetry — 3 Credits

Readings, lectures and discussions on representative works from the Age of Reason through romanticism.

3 Class Hours
Prerequisite: LA 216 Masterpieces of French Prose and Poetry

LA 218 Masterpieces of French Prose and Poetry — 3 Credits

Readings, lectures and discussions on representative works from mid-nineteenth century starting with realism to contemporary times.

3 Class Hours
Prerequisite: LA 217 Masterpieces of French Prose and Poetry

LA 219 Intermediate Italian — 3 Credits

Comprehensive review of grammar and structure of the language. Emphasis on aural comprehension and oral practice in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: LA 127 Beginning Italian

LA 220 Intermediate Italian — 3 Credits

Intensive reading of literary works of recognized authors as a basis for topics of conversation in Italian in the classroom. Practice in audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: LA 219 Intermediate Italian

LA 221 Intermediate Italian — 3 Credits

Intensive reading of literary works of recognized authors as a basis for topics of conversation in Italian in the classroom. Practice in audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
Prerequisite: LA 220 Intermediate Italian

LA 222 Intermediate German — 3 Credits

Emphasis on grammar with difficult problems of syntax and translation. Conversation with audio-visual classes and audio-lingual laboratory work.

3 Class Hours, 1 Laboratory Hour

Prerequisite: LA 121 Beginning German

LA 223 Intermediate German — 3 Credits

Introduction to selections from standard authors from the earliest written texts to the 20th century. Essays and reports on readings in German. **3 Class Hours**

Prerequisite: LA 222 Intermediate German

LA 224 Intermediate German — 3 Credits

Reading and discussion of original texts of standard authors in the 19th and 20th centuries with cultural and historical implications. Essays and reports on readings in German.

3 Class Hours

Prerequisite: LA 223 Intermediate German

LA 225 Living German Literature — 3 Credits

Lectures, readings and discussions of outstanding authors: Opitz, Gryphius, Grimmelshausen, Gottsched, Gleim, Kleist, Klopstock, Lessing, Wieland, Herder, Goethe, Schiller.

3 Class Hours

Prerequisite: LA 224 Intermediate German

LA 226 Living German Literature — 3 Credits

Lectures, readings and discussions of outstanding authors: Goethe, Schiller, A. W. Schlegel, Friedrich Schlegel, Grimm brothers, Tieck, Heine, Grillparzer, Hebbel, Keller.

3 Class Hours

Prerequisite: LA 225 Living German Literature

LA 227 Living German Literature — 3 Credits

Lectures, readings and discussions of the past six decades: Hauptmen, Schnitzler, Georg Kaiser, Thomas Mann, Hesse, Kafka, Brecht and others. **3 Class Hours**

Prerequisite: LA 226 Living German Literature

LA 228 Germany Today and Tomorrow — 3 Credits

German as a universal language and the international scope of her literature. Historical and cultural problems: international relationship, education, transportation, Germany's plans for the next century. This elective will not satisfy any part of the Humanities requirement.

3 Class Hours

LA 239 Contemporary Ethics — 3 Semester Credits

Main normative and meta-ethical theories of the 20th century, including Moore, Toulmin, Westermarck, Ayer, Dewey, Hare. Examination of the meaning of moral judgments and the criteria of validity, justification of moral beliefs and the grounds of moral responsibility, including objectivism, subjectivism, emotivism, instrumentalism, God and evil.

4½ Class Hours

LA 241 Logic — 3 Semester Credits

Analysis and practical application of the elements of logic as they apply to thinking on both a linguistic and formal level. Includes forms of argument, informal and formal fallacies, significance of the emotions on decision-making, inductive and deductive processes.

4½ Class Hours

LA 804 Effective Speaking — 3 Credits

Speech communication, through voice, words and action. Voice production, diction, platform presence. Organization of ideas. Practice in presenting speeches of different types.

3 Class Hours

LA 840 Introduction to Philosophy — 3 Credits

Basic problems of philosophy, such as a **priori** knowledge, the reality of the physical world, morality, the mind-body relationship, freedom, the supernatural.

3 Class Hours

LA 858 Fine Arts: Introduction to Art — 3 Credits

Basic art principles and concepts together with their historical development as shown in representative works of painting, sculpture and architecture. Gallery visits. For Liberal Arts students.

3 Class Hours

LA 859 Fine Arts: Introduction to Theatre — 3 Credits

Art of the theatre, for the purpose of increasing understanding and appreciation of drama. A cultural approach considering the interrelationship of all aspects of production including plays, acting, directing, costume, make-up and lighting. Attendance at local productions. For Liberal Arts students.

3 Class Hours

LA 860 Fine Arts: Introduction to Music — 3 Credits

Basic elements of music common to all forms of musical expression. Emphasis on developing listening habits, which bring the student to an informed awareness and understanding of music. Attendance at concerts and recitals. For Liberal Arts students.

3 Class Hours

LA 861 17th and 18th Century Music — 3 Credits

Music and musical styles of the 17th and 18th centuries. Emphasis upon the composers and their styles and the relationship of music to the social, political and other cultural reforms of the period. For Liberal Arts students.

3 Class Hours

Prerequisite: LA 860 Fine Arts: Introduction to Music or consent of instructor

LA 862 19th Century Music — 3 Credits

Important musicians and musical styles of the Romantic Period. Emphasis upon the developments in piano literature, the symphony orchestra and opera. Listening to selected recordings and attendance at local concerts form an integral part of the discussions. For Liberal Arts students.

3 Class Hours

Prerequisite: LA 860 Fine Arts: Introduction to Music or consent of instructor

LA 863 20th Century Music — 3 Credits

Important musicians and musical styles in the 20th century. Emphasis upon the trends and developments of music in America as well as a study of leading European composers. For Liberal Arts students.

3 Class Hours

Prerequisite: LA 860 Fine Arts: Introduction to Music or consent of instructor

LA 864 Play Production Workshop — 3 Credits

Progressive participation and instruction in play production and acting. Scenes chosen to perfect techniques examined in technical theatre and performance as studied in LA 859 Fine Arts: Introduction to Theatre.

3 Class Hours

Prerequisite: LA 859 Fine Arts: Introduction to Theatre

LA 865, 866 Studio Art — 3, 3 Credits

Basic drawing skills as a foundation for studio work, including black and white medium and color, using a variety of media, and ultimately leading into oils, acrylics and water-color painting. Composition, color, sketching from life and nature, with emphasis on a creative approach to subject matter.

6 Laboratory Hours each

LA 867 Music Theory — 3 Credits

A beginning course in applied music, teaching the student to read music. Study of intervals, scales, rhythms and basic harmony. Ear training through melodic, rhythmic and harmonic drills and dictation.

3 Class Hours

Social Sciences

LA 140 American Economic History — 3 Semester Credits

A discussion of the economic growth and development of the United States. Colonial heritage and the market system. Population, natural resources and technology. Transportation. The capital market. Federal and state governments. (Formerly LA 240).

LA 177 Anthropology (Physical) — 3 Credits

Introduction to human biology, examining genetics and ecology, the primate order, fossil evidence for man's evolution and variation in living populations. Formerly LA 277.

3 Class Hours

LA 178 Anthropology (Cultural and Social) — 3 Credits

Introduction to anthropological theory, analysis of social organization and institutions. Basic linguistics using non-Western societies as illustrations. Formerly LA 278.

3 Class Hours

Prerequisite: LA 177 Anthropology

LA 179 Anthropology (Comparative Social Systems) — 3 Credits

A comparative study of various levels of social complexity, such as the band, tribe, chiefdom and state, with emphasis on cultural evolution and change using data from the archeological record and Western and non-Western societies. Formerly LA 279.

3 Class Hours

Prerequisite: LA 178 Anthropology

LA 255 Economics — 3 Credits

Introduction to the principles and problems of macro-economics, with primary emphasis on unemployment and inflation. Basic characteristics of the American economic system, national income determination, business cycles, fiscal policy, the public debt, money and banking, monetary policy. For Liberal Arts, Business, Executive Secretary and Engineering Science students.

3 Class Hours

LA 256 Economics — 3 Credits

Continuation of macro-economics, with primary emphasis on the causes and effects of economic growth. Introduction to the principles and problems of micro-economics. Price theory and resource allocation. Theory of the firm from competition to monopoly and connecting government policy. For Liberal Arts, Business, Executive Secretary and Engineering Science students.

3 Class Hours

Prerequisite: LA 255 Economics

LA 257 Economics — 3 Credits

Continuation of micro-economics. Income distribution and general equilibrium theory. Current economic problems, international economics, the underdeveloped countries and comparative economic systems. For Liberal Arts, Business, Executive Secretary and Engineering Science students.

3 Class Hours

Prerequisite: LA 256 Economics

LA 273 Peoples and Cultures of the Pacific — 3 Semester Credits

Survey of social organization, institutions and physical types of the native peoples of Polynesia, Melanesia, Micronesia and Australia. Study of culture history, environment and the effects of modernization on traditional cultures.

4½ Class Hours

Prerequisite: LA 178 Anthropology

LA 280 Sociology — 3 Credits

Sociological facts and principles dealing with the scientific study of human relationships. Emphasis on analysis and study of culture and human society, socialization, groups and group structures. For Liberal Arts, Chemical Technology and degree Nursing students.

3 Class Hours

LA 281 Sociology — 3 Credits

Stratification, collective behavior patterns and the various social institutions including associations, the family and education. The application of sociological principles relating to the agents of social change. For Liberal Arts, Chemical Technology and degree Nursing students.

3 Class Hours

Prerequisite: LA 280 Sociology

LA 282 Sociology — 3 Credits

The structure of the aggregates of population, minority groupings, crime and delinquency, and major changes in technology, urbanism and political structures as they relate to man. For Liberal Arts, Chemical Technology and degree Nursing students.

3 Class Hours

Prerequisite: LA 281 Sociology

LA 283 Social Science — 3 Credits

Problems of public policy. Consideration of the meaning of "liberty" and "equality" in human affairs, values to which the American society presumably is committed. Brief overview of contemporary problems. Limitations imposed by the American political system on the problem-solving capacity of the people. Problems caused by rapid urbanization in "The Modern Metropolis."

3 Class Hours

LA 284 Social Science — 3 Credits

Problems of public policy continued. Examination of contemporary domestic problems: the racial crisis, women's rights, poverty, the environmental issue.

3 Class Hours

Prerequisite: LA 283 Social Science

LA 285 Social Science — 3 Credits

Problems of public policy continued. America's role in world affairs. Relative to the two topics—"America and the Poor Nations" and "The Resolution of International Conflict"—the questions of what American policy has been and what it should be are raised.

3 Class Hours

Prerequisite: LA 284 Social Science

LA 286 Psychology — 3 Credits

Definition and history of psychology as a science, including systems, fields, methodology. Structure and function of the brain and nervous system, psychogenetics, development of the individual, motivation and emotion. For Liberal Arts and degree Nursing students.

3 Class Hours

LA 287 Psychology — 3 Credits

Sensation, perception, learning, memory, individual differences and their measurement. For Liberal Arts and degree Nursing students.

3 Class Hours

Prerequisite: LA 286 Psychology

LA 288 Psychology — 3 Credits

Ability testing and intelligence, theories of personality, conflict and adjustment, disordered behavior, therapies, mental health. For Liberal Arts and degree Nursing students.

3 Class Hours

Prerequisite: LA 287 Psychology

LA 810 Psychology — 3 Credits

Principles of psychology as they relate to the problems of human behavior and adjustment. Emphasis on growth and development, motivation, emotions, learning, individual differences, behavior disorders, personality and mental hygiene. For students in most Associate in Applied Science degree programs. **3 Class Hours**

LA 820 Economics — 3 Credits

Economic facts and principles and their application to the American society. Emphasis on macro-economics: production, consumption, fiscal policy, national income analysis, money and banking. Current economic problems encompassing large-scale enterprise, labor-management relations, international trade, and a comparison of capitalism with other economic systems. For students in most Associate in Applied Science degree programs.

3 Class Hours

LA 830 Sociology — 3 Credits

An issue-centered sociological approach to selected themes that relate to the major concerns confronting American society. The scientific revolution, social organization and survival, population trends, education, and the production and distribution of abundance. For students in most Associate in Applied Science degree programs. **3 Class Hours**

LA 851 Science and Civilization — 3 Credits

A survey of the interplay between science/technology and Western Civilization from earliest times to the present. Major emphasis will be on the industrial and post-industrial periods. Role of culture in determining scientific/technological advances, interplay between war and scientific/technological advances, necessary conditions for an industrial revolution (scientific/technological), impact of science/technology on a post-industrial society.

3 Class Hours

MATHEMATICS

MA 100 Mathematics — 3 Credits

An auto-tutorial independent study self-paced course in elementary algebra encompassing fundamental operations of real numbers, evaluation of algebraic expressions, rational numbers, fractional expressions, solutions of linear equations, inequalities, factoring, operations with radicals, the quadratic formula. For Business students. **3 Class Hours**

MA 101 Mathematics — 3 Credits

An auto-tutorial independent study self-paced course in intermediate algebra encompassing sets, graphs on the number line, field properties, factoring, fractions, exponents, radicals, solution sets of linear and quadratic equations, relations and fractions, conic sections, variations, inverse functions, logarithms, solution sets of systems of equations and inequalities, determinants and Cramer's rule, binomial theorem, sequences and series, complex number system, permutations, combinations, probability. **3 Class Hours**

Prerequisite: MA 100 Mathematics or equivalent

MA 105 Mathematics — 3 Credits

An auto-tutorial independent study self-paced course in elementary statistics encompassing sets, summation, grouping of data, histograms, mean, median, mode, permutations, combinations, probability, Bayes' rule, probability distributions (binomial and normal), hypothesis testing (small and large sample, x^2 test), correlation and regression. For students in Health Science programs. **3 Class Hours**

Prerequisite: MA 100 Mathematics or equivalent

MA 107 Mathematics—A Liberal Art — 3 Credits

An introduction to the variety and structural beauty of mathematics. Inductive and deductive reasoning, games and number theory, functions and their graphs. Recommended only for Fine Arts or Humanities majors in Liberal Arts.

3 Class Hours

MA 108 Mathematics—A Liberal Art — 3 Credits

An introduction to the variety and structural beauty of mathematics. Geometric pattern and symmetry, mathematical curves in nature and science, large numbers, exponents and logarithms. Recommended only for Fine Arts or Humanities majors in Liberal Arts.

3 Class Hours

MA 109 Mathematics—A Liberal Art — 3 Credits

An introduction to the variety and structural beauty of mathematics. Combinations, permutations and probability, statistics, statistical graphs, misleading uses of statistics, topology and networks. Recommended only for Fine Arts or Humanities majors in Liberal Arts.

3 Class Hours

MA 113 Introduction to Finite Mathematics — 3 Credits

The real numbers, an introduction to logic and operations with vectors and matrices. For Liberal Arts students.

3 Class Hours

MA 115 Introduction to Finite Mathematics — 3 Credits

Probability, expected value, Markov chains, linear programming, game theory, Gauss-Jordan elimination. For Liberal Arts Students.

3 Class Hours

Prerequisite: MA 113 Introduction to Finite Mathematics

MA 116 Statistics — 4 Credits

Descriptive statistics, organization and presentation of data, measures of central tendency, variance, standard deviation, binomial distribution, statistical inference, random sampling, hypothesis testing, confidence intervals, normal distribution, analysis of variance, chi-square distribution, students t-distribution, correlation and regression. For Liberal Arts students majoring in social science or the science option.

4 Class Hours

Prerequisite: MA 115 Introduction to Finite Mathematics or MA 101 Mathematics or consent of instructor

MA 120 College Mathematics and Calculus for Business — 3 Credits

Linear, quadratic, exponential and logarithmic functions, systems of linear equations, inequalities, systems of linear inequalities and linear programming. For Business Administration students.

3 Class Hours

Prerequisite: MA 101 Mathematics or equivalent

MA 121 College Mathematics and Calculus for Business — 3 Credits

Matrix algebra, systems of linear equations solved by matrix methods, arithmetic and geometric progressions, infinite series, limits, the derivative and its applications, method of least squares. For Business Administration students.

3 Class Hours

Prerequisite: MA 120 College Mathematics and Calculus for Business

Instructor in a calculus class.

MA 122 College Mathematics and Calculus for Business — 3 Credits

Integration, area under curve, set union and intersection, permutations, combinations, binomial theorem, sample spaces and events, probability, conditional probability, Bayes' Rule, mathematical expectation, games of strategy, binomial, geometric and Poisson probability functions. For Business Administration students. **3 Class Hours**

Prerequisite: MA 121 College Mathematics and Calculus for Business

MA 133 Modern Basic Mathematics — 3 Credits

Basics of set theory and logic used to define and study the operations of addition, subtraction, multiplication and division of whole numbers. For Liberal Arts student, especially recommended for elementary education majors. **2 Class Hours, 2 Laboratory Hours**

MA 134 Modern Basic Mathematics — 3 Credits

Algorithms of the arithmetic of whole numbers. Definition and study of arithmetic of integers and rational numbers. Modular arithmetic. For Liberal Arts students, especially recommended for elementary education majors. **2 Class Hours, 2 Laboratory Hours**

Prerequisite: MA 133 Modern Basic Mathematics

MA 135 Modern Basic Mathematics — 3 Credits

Decimals and real numbers, ratio and proportion, word problems and equations, geometric concepts in plane and space, measurement and error, British and metric system, geometric transformations in the plane, analytic geometry. For Liberal Arts students, especially recommended for elementary education majors.

2 Class Hours, 2 Laboratory Hours

Prerequisite: MA 134 Modern Basic Mathematics

MA 140 College Algebra and Trigonometry — 4 Credits

Topics in algebra and trigonometry necessary in technical courses. System of real numbers. Functions in general. Graphs of functions. Exponential, logarithmic and trigonometric functions. Complex numbers, theory of equations. Systems of equations. For students in engineering technologies.

4 Class Hours

MA 141 Calculus — 3 Credits

The derivative, curve sketching, maxima and minima, direction fields, velocity and acceleration, circular functions, the exponential function, integration, applications of integration.

3 Class Hours

Prerequisite: MA 140 College Algebra and Trigonometry

MA 142 Calculus — 3 Credits

Numerical integration, space geometry, volume, partial derivatives, approximate methods. Techniques of differentiation, applications of derivatives, inverse functions, logarithms.

3 Class Hours

Prerequisite: MA 141 Calculus

MA 150 Principles of Mathematics — 4 Credits

Sets and methods of proof, binary operations and properties of real numbers, integers and mathematical induction, arithmetic of polynomials and algebraic fractions, exponents and radicals, linear and quadratic equations, simultaneous equations, transformation of coordinates.

4 Class Hours

MA 151 Principles of Mathematics — 4 Credits

Vectors and matrices, determinants, simultaneous equations solved by matrix methods, algebraic and graphical solution of linear and quadratic inequalities, simultaneous linear inequalities and linear programming, functions, inverse functions, algebraic functions, properties of polynomials, roots of polynomial equations, exponential and logarithmic functions.

4 Class Hours

Prerequisite: MA 150 Principles of Mathematics

MA 152 Principles of Mathematics — 4 Credits

Trigonometric functions of angles, right triangles, laws of sines, cosines and tangents, trigonometric funtions of real numbers, graphs, identities, trigonometric equations, inverse trigonometric functions, complex numbers and De Moivre's Theorem, analytic geometry and applications to plane geometry lines and conic sections, polar coordinates, parametric equations.

4 Class Hours

Prerequisite: MA 151 Principles of Mathematics

MA 160 Calculus with Analytic Geometry — 4 Credits

Inequalities, rectangular coordinate system and an introduction to analytic geometry of lines and conic sections. Functions, limits, continuity. The derivative, differentiation of algebraic functions, inverse functions, applications of the derivative including theory of extremes, differentials. For Liberal Arts students.

4 Class Hours

Prerequisite: MA 152 Principles of Mathematics or consent of instructor

MA 161 Calculus with Analytic Geometry — 4 Credits

Indefinite and definite integrals, fundamental theorem of calculus, applications of integration including area, volume, work, length of plane curve. Analytic geometry including translation and rotation of axes, asymptotes, symmetry, angle between curves. Differentiation and integration of trigonometric, logarithmic and exponential functions. For Liberal Arts students.

4 Class Hours

Prerequisite: MA 160 Calculus with Analytic Geometry

MA 162 Calculus with Analytic Geometry — 4 Credits

Methods of integration including substitutions, partial fractions and integration by parts. Vectors in the plane including parametric equations, differentiation, curvature and arc lengths. Indeterminate forms, L'Hospital's Rule, improper integrals. Polar coordinates including graphs, differentiation and area. For Liberal Arts students. **4 Class Hours**

Prerequisite: MA 161 Calculus with Analytic Geometry

MA 170 Calculus with Analytic Geometry — 4 Credits

Equations of a straight line, rates of change, limits, derivatives of algebraic functions, applications, integration. For Engineering Science students. **4 Class Hours**

MA 171 Calculus with Analytic Geometry — 4 Credits

Applications of the definite integral, areas, volumes, moments, transcendental functions, logarithms, exponential functions, hyperbolic functions, methods of integration, plane analytic geometry. For Engineering Science students. **4 Class Hours**

Prerequisite: MA 170 Calculus with Analytic Geometry

MA 172 Calculus with Analytic Geometry — 4 Credits

Polar coordinates, vectors and parametric equations, linear algebra, vectors in n-space, vector functions and their derivatives, partial differentiation. For Engineering Science students. **4 Class Hours**

Prerequisite: MA 171 Calculus with Analytic Geometry

MA 240 Calculus — 3 Credits

Trigonometric functions, techniques of integration, interpolation and numerical integration, first order differential equations. **3 Class Hours**

Prerequisite: MA 142 Calculus

MA 241 Calculus — 3 Credits

Second order linear differential equations, vectors, applications of vectors, functions of several variables, double integrals. **3 Credit Hours**

Prerequisite: MA 240 Calculus

MA 242 Calculus — 3 Credits

Taylor approximations, power series, improper integrals, higher partial derivatives, vector operations, multiple integrals. **3 Class Hours**

Prerequisite: MA 241 Calculus

MA 263 Calculus with Analytic Geometry — 4 Credits

Sequence series, convergence tests, power series, Taylor's theorem. Analytic geometry and vectors in three-dimensional space including equations of lines, scalar products, vector products, equations of planes, differentiation, space curves, surfaces, cylindrical and spherical coordinates. Applications of integration including centroid and moment of inertia of plane region. For Liberal Arts students. **4 Class Hours**

Prerequisite: MA 162 Calculus with Analytic Geometry

MA 264 Calculus with Analytic Geometry — 4 Credits

Functions of several variables, limits, continuity, partial derivatives, tangents and normals, directional derivative, gradient, maxima and minima. Multiple integrals and applications including polar coordinates, cylindrical and spherical coordinates. Introduction to differential equations including separation of variables, homogeneous and exact equations, linear equations, series solutions and applications. For Liberal Arts students.

4 Class Hours

Prerequisite: MA 263 Calculus with Analytic Geometry

MA 265 Linear Algebra — 4 Credits

Linear equation and matrices, vector spaces, independence bases, dimension, the algebra of linear transformations and matrices, determinants, eigenvalues and eigenvectors.

4 Class Hours

Prerequisite: MA 264 Calculus with Analytic Geometry

MA 270 Calculus with Analytic Geometry — 4 Credits

Multiple integrals, vector analysis, infinite series, complex numbers and functions. For Engineering Science students.

4 Class Hours

Prerequisite: MA 172 Calculus with Analytic Geometry

MA 271 Differential Equations — 3 Credits

First order differential equations, separable equations, exact equations, integrating factors, second order linear equations, homogeneous and non-homogeneous problems, series solutions. For Engineering Science students.

3 Class Hours

Prerequisite: MA 270 Calculus with Analytic Geometry

MA 272 Differential Equations — 3 Credits

Higher order linear equations, Laplace Transform, systems of first order equations, numerical methods, linear second order boundary value problems, Fourier series, linear second order partial differential equations. For Engineering Science students.

3 Class Hours

Prerequisite: MA 271 Differential Equations

MEDICAL RECORD TECHNOLOGY

MR 100 Introduction to Medical Record Science — 1 Credit

Introduction to the historical development of the health care field and to the medical record department. Overview of the medical record profession. Numbering systems and methods. Retention, storage and microfilming of the medical record.

2 Laboratory Hours

MR 102 Medical Terminology — 3 Credits

Medical terminology as correlated with anatomical systems. Suffixes, prefixes and use of medical dictionaries. Introduction to filing and preserving records for Medical Office Assistant students. Course also taken by Medical Record Technology students.

2 Class Hours, 2 Laboratory Hours

MR 103 Terms and Transcription — 4 Credits

Continuation of MR 102 Medical Terminology. Typing of medical reports and correspondence, use of dictionaries and reference books. For Medical Office Assistant and Medical Record Technology students.

Must be taken concurrently with BI 138 Anatomy and Physiology

2 Class Hours, 4 Laboratory Hours

Prerequisite: MR 102 Medical Terminology

MR 105 Medical Record Science — 4 Credits

Definitions of, standards for and development of the medical record as to content, format, evaluation and completion. Study of hospital statistics: sources, definitions, collection, reports and presentation of data. A comprehensive review of the organization of the medical staff, primarily within the hospital, including functions and membership qualifications. Special emphasis on the relationship between the medical staff and the medical record technician.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MR 102 Medical Terminology

MR 144 Directed Practice Hospital

Summer directed practice experience (4 weeks) in cooperating hospitals. Develops insight and skills into medical record procedures. Graduation requirement.

160 Hours in Hospital Record Library

Prerequisite: MR 105 Medical Record Science

MR 224 Medical Record Science — 4 Credits

Purposes of classifying diseases and operations, differences between and historical development of nomenclature and classification systems. The value of indexes and registers with special emphasis on Tumor Registry.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MR 144 Directed Practice in Hospital

MR 225 Medical Record Science — 4 Credits

The importance of the medical record as a legal document and the effect of confidential communication laws on the release of information. Consents, authorizations and releases. Introduction to the organizational background of long term care facilities with emphasis on the standards and requirements for medical record keeping and reporting. Role of accrediting bodies and governmental agencies in approval and certification.

3 Class Hours, 3 Laboratory Hours

Prerequisite: MR 224 Medical Record Science

MR 237 Trends in Medical Record Science — 2 Credits

Preparation and discussion of reports from current literature and medical journals. Discussion of the organization, layout and management of a medical record department. New trends in medical record science.

2 Class Hours

Prerequisite: MR 225 Medical Record Science

MR 244, 245 Directed Practice Hospital — 5, 5 Credits

Directed practice experience in the hospital and related affiliation sites. Correlated with lecture and laboratory classes to develop insight and skills into medical record procedures.

1 Class Hour, 16 Laboratory Hours each

Prerequisite: MR 144 Directed Practice Hospital

MECHANICAL TECHNOLOGY

MT 103 Engineering Drawing — 2 Credits

Basic course that includes line and instrument exercises, lettering, orthographic projection, dimensioning and notes, auxiliary views, sections, threads and fasteners, assembly drawings and sketching. For Engineering Science students.

6 Laboratory Hours

MT 110 Engineering Drawing — 1 Credit

Basic course that includes lettering, line and instrument exercises, orthographic projection, dimensioning and notes, auxiliary views and sections. For Mechanical, Civil and Environmental Health Technology students.

3 Laboratory Hours

MT 111 Engineering Drawing and Descriptive Geometry — 2 Credits

Basic rules and practice for drawing threads, fasteners and assemblies including sketching techniques. Principles of descriptive geometry designed to determine true lengths, true size and relationships between lines and surfaces, to find intersections, to ascertain clearances, and to decide relationships affecting the design of parts in a machine or structure.

1 Class Hour, 3 Laboratory Hours
Prerequisite: MT 110 Engineering Drawing

MT 112 Descriptive Geometry — 2 Credits

Basic principles of descriptive geometry designed to determine true relationships between lines and surfaces, to find intersections, to locate elements or tangents, to ascertain clearances, or to decide relationships affecting the design of parts in a machine or structure. For Engineering Science students.

1 Class Hour, 2 Laboratory Hours
Prerequisite: MT 103 Engineering Drawing

MT 128 Survey of Engineering Laboratories — 3 Credits

A general survey of engineering materials, physical tests and manufacturing processes encountered in mechanical technology laboratories. Lectures, demonstrations and participation in manufacturing processes, casting, welding and forging, metallurgy, precision measurements, quality control, thermodynamics, technical sketching and blueprint reading. For Engineering Secretarial students.

2 Class Hours, 3 Laboratory Hours

MT 130 Manufacturing Processes — 3 Credits

Basic manufacturing materials and processes, such as melting and casting metal, powder metallurgy, plastics, elementary aspects of metal cutting machine tools. Practice and study of oxyacetylene, arc, resistance welding. For Mechanical and Civil Technology students.

2 Class Hours, 2 Laboratory Hours

MT 131 Manufacturing Processes — 2 Credits

Elements of machine tool operation involving the use of the lathe, miller, shaper, drill press and fundamental bench operations. Study of cutting speeds, feeds, coolants, threads, tapers and tool grinding.

1 Class Hour, 3 Laboratory Hours
Prerequisites: MT 130 Manufacturing Processes and MA 140 College Algebra and Trigonometry and MT 110 Engineering Drawing

MT 132 Manufacturing Processes — 2 Credits

Continuation of MT 131 Manufacturing Processes plus operation of the surface grinder and the cylindrical grinder, advanced lathe operations, jig boring, gear cutting, lapping, honing and scraping. Practice and study of turret lathe and automatic screw machine operations.

1 Class Hour, 3 Laboratory Hours
Prerequisite: MT 131 Manufacturing Processes

MT 135 Materials and Processes — 4 Credits

Advanced study of the properties and applications of engineering materials and the processes involved in their utilization, including electrical discharge machining, tape-controlled milling and drilling, ultrasonic machining.

3 Class Hours, 3 Laboratory Hours
Prerequisites: MT 130 Manufacturing Processes and MT 165 Metallurgy and MT 257 Strength of Materials

MT 155 Applied Mechanics (Statics) 3 Credits

Free body diagram, trusses, spatial force systems, friction, centroids, moments of inertia, shear and moment diagrams. For Mechanical and Civil Technology students.

3 Class Hours

Prerequisites: MA 140 College Algebra and Trigonometry and PH 143 Physics

MT 156 Applied Mechanics (Dynamics) 3 Credits

Forces and force systems as they influence the motion of solid and fluid bodies. Kinematics, kinematics of rigid bodies, kinetics, work and energy, impulse-momentum, mechanical vibrations.

3 Class Hours

Prerequisites: MA 141 Calculus and MT 155 Applied Mechanics

MT 165 Metallurgy 4 Credits

Fundamentals of the physical metallurgy of ferrous and non-ferrous alloys, investigation of the physical properties of metals, hardness tests, thermal analysis, grain structure examination.

3 Class Hours, 3 Laboratory Hours

Prerequisites: PH 144 Physics and CH 104 Chemistry

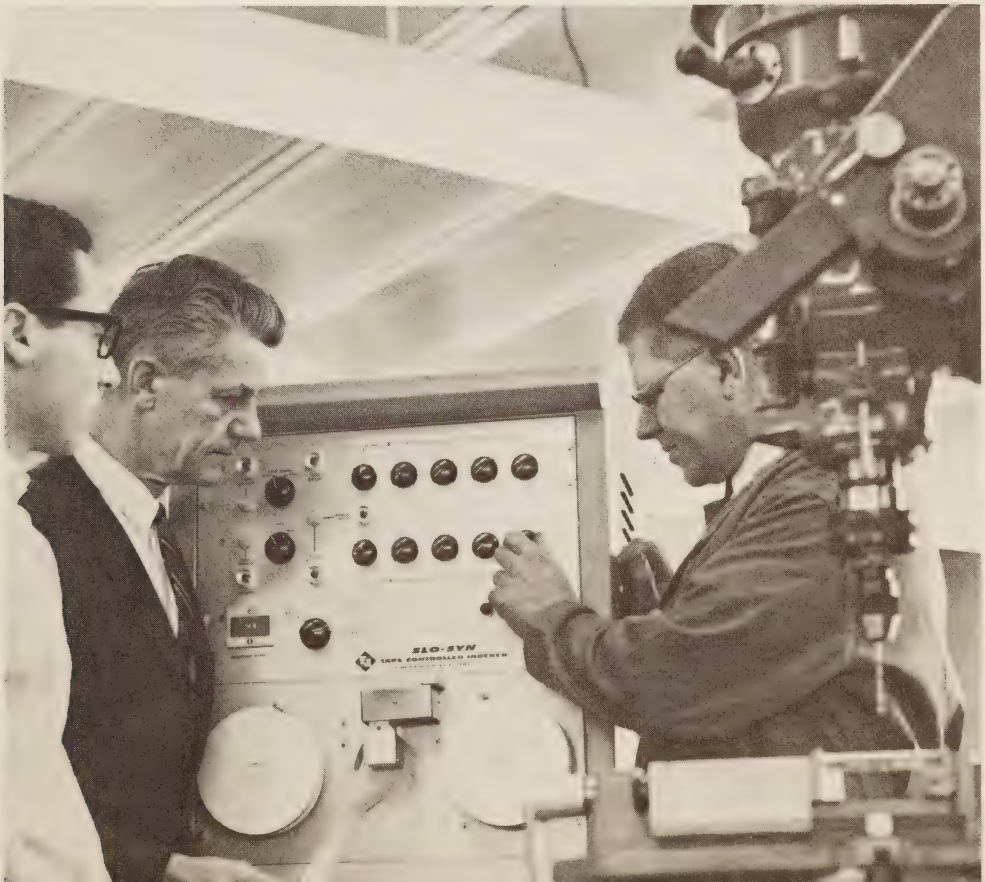
MT 220 Mechanical Design 3 Credits

Machine motion and basic mechanisms. Machine motion includes rectilinear and curvilinear displacement, velocity, acceleration. Basic mechanisms include linkages, cams, gears.

2 Class Hours, 3 Laboratory Hours

Prerequisites: MT 111 Engineering Drawing and Descriptive Geometry and MT 156 Applied Mechanics and MT 257 Strength of Materials

Instructor showing the operation of an automatic tape-controlled vertical milling-drilling machine in a Mechanical Technology laboratory.



MT 221 Mechanical Design — 4 Credits

Principles of mechanical design covering the selection of materials, stress investigation, design of fundamental machine elements.

3 Class Hours, 3 Laboratory Hours
Prerequisites: MT 132 Manufacturing Processes and MT 220 Mechanical Design

MT 240 Precision Measurement — 2 Credits

Theory and practice of precision measurement of the dimensional character of manufactured parts. Measurements of physical quantities such as time, mass, temperature, flow, pressure and speed which are utilized in the control of physical systems.

1 Class Hour, 3 Laboratory Hours
Prerequisites: MT 132 Manufacturing Processes and PH 145 Physics

MT 257 Strength of Materials — 4 Credits

Stress and strain, elasticity, torsion, welded joints, riveted joints, beam stresses, centroids, moments of inertia, shear and moment diagrams. Laboratory work includes strain gauges, tests on wood, metals and plastics conducted in accordance with ASTM and AASHO standards.

3 Class Hours, 3 Laboratory Hours
Prerequisites: MT 155 Applied Mechanics and MA 142 Calculus

MT 260 Thermodynamics — 4 Credits

Laws of thermodynamics and application to changes of state of gases. Properties of gases and the equation of state, property and energy relationships in gas processes and in gas cycles for power and refrigeration, performance of thermal apparatus employing gas processes. Laboratory experiments on thermal processes and apparatus.

3 Class Hours, 3 Laboratory Hours
Prerequisites: AD 120 Fundamentals of Computer Programming and MT 261 Fluid Mechanics

MT 261 Fluid Mechanics — 3 Credits

Behavior of compressible and non-compressible fluids under static and dynamic conditions, including principles of hydrostatics, pressure measurements, flow, flow measurement, viscosity, hydrodynamic power and force.

3 Class Hours
Prerequisites: PH 144 Physics and MA 142 Calculus and MT 156 Applied Mechanics

MT 262 Thermodynamics — 4 Credits

Application of laws of thermodynamics to changes of state of vapors. Properties of vapors, property and energy relationships in vapor processes and in vapor cycles for power and refrigeration, performance of thermal apparatus employing vapors. Heat transfer. Laboratory experiments on fluid flow and thermal processes and apparatus.

3 Class Hours, 3 Laboratory Hours
Prerequisite: MT 260 Thermodynamics

MT 267 Statistical Quality Control — 4 Credits

Probability and statistics as they relate to sampling theory and the control of quality in the manufactured product. Standard deviation, areas under, and ordinates of the normal curve, the Poisson, control charts. Single, double and sequential sampling plans, machine capability, product reliability, statistical dimensioning.

3 Class Hours, 2 Laboratory Hours
Prerequisite: MA 142 Calculus

MT 270 Engineering Materials — 3 Credits

Atomic structure, metallic phases, ceramic materials and properties, multi-phase materials and equilibrium relationships, reactions within solid materials, corrosion, oxidation, composite materials. For Engineering Science students.

3 Class Hours

Prerequisites: PH 172 Physics and CH 135 Chemistry

MT 271 Engineering Materials — 3 Credits

Mechanical tests, elastic properties, microplasticity of materials, plastic deformation, fracture, strengthening mechanisms. Ceramics and inorganic non-metals, polymers. For Engineering Science students.

3 Class Hours

Prerequisite: MT 270 Engineering Materials

PHYSICAL EDUCATION

PE 100 Physical Education — 1 Credit

A sequence of courses to familiarize students with the need for and benefits of physical activity in modern living. A self-evaluation of one's physical condition and potential. Guidance in the selection of physical activities for leisure time use.

Instruction in a variety of carry-over sports, such as archery, badminton, bowling, golf, horseshoes, tennis, weight training. Participation and rudimentary instruction in such team sports as soccer, basketball, volleyball, softball and field hockey, as well as in tumbling, free exercise, dance. Instruction in physical conditioning, beginning swimming, life saving, water safety, skiing, jogging, hiking and camping, Judo-Karate, self-defense.

NOTE: Students enrolled in Physical Education must wear a gym uniform for gym activities.

2 Class Hours

PHYSICS

PH 101 Physical Science — 3 Credits

Astronomy: Beginnings of astronomy, the earth and moon, tools and methods of the astronomer, planets and satellites, the sun and other stars, cosmology.

Geology: Composition of the earth's crust, erosion, structural geology. For Secretarial, Accounting, Marketing Management students.

2 Class Hours, 2 Laboratory Hours.

PH 102 Physical Science — 3 Credits

Mechanics, heat and sound: Linear motion, Newton's laws of motion, circular motion, gravity energy, momentum, wave motion, sound, temperature, heat, change of state, properties of matter.

Electricity and electromagnetic fields: Electrostatics, electric field intensity, potential and potential difference, motion of charges, magnetic fields, electromagnetic induction, electromagnetic radiation. For Engineering Secretarial students.

2 Class Hours, 2 Laboratory Hours

PH 106 Physics — 3 Credits

Vectors, linear motion, gravitation, work, energy, momentum, circular motion, temperature, heat, thermodynamics, wave motion, sound. For Environmental Health, Medical Laboratory and Radiologic Technology students.

2 Class Hours, 2 Laboratory Hours

PH 107 Physics — 3 Credits

Electricity and electromagnetic waves: Electrostatics, electric field intensity, potential, potential difference, motion of charges, magnetic fields, electromagnetic induction, electromagnetic radiation.

Optics: Nature and speed of light, reflection, refraction, mirrors, thin lenses, optical instruments. For Environmental Health, Medical Laboratory and Radiologic Technology students.

2 Class Hours, 2 Laboratory Hours

Prerequisite: PH 106 Physics

PH 110 Physics (Radiation) — 3 Credits

Atomic structure, nuclear radiation, charged-particle and photon interactions with matter, neutron activation, theory and operation of radiation detecting instruments, basic criteria for radiation measurement, radiation hazards and protection. For Medical Laboratory and Radiologic Technology students.

2 Class Hours, 2 Laboratory Hours

Prerequisites: MA 101 Mathematics and PH 106 Physics

PH 113 Physical Science — 4 Credits

Copernican and Ptolemaic models of the solar system. The planets, sun, moon and comets. Stellar evolution. Modern developments in astronomy and cosmology. For Business Administration and Liberal Arts students.

3 Class Hours, 2 Laboratory Hours

PH 114 Physical Science — 4 Credits

Newton's laws of motion and gravitation. Acceleration due to gravity and circular motion. Matter and heat, gas laws, waves and wave motion. For Business Administration and Liberal Arts students.

3 Class Hours, 2 Laboratory Hours

PH 115 Physical Science — 4 Credits

Crystal structure and classification. Identification of common minerals from their characteristic properties. Rocks and composition of crust. Volcanoes, erosion, structural geology, earthquakes, geologic dating, unconformities. For Business Administration and Liberal Arts students.

3 Class Hours, 2 Laboratory Hours

PH 116 Physical Science — 4 Credits

Methods of measurement and the development of the wave model of light. Use of the wave model to study crystal structure. PSNS apporach (Physical Science for Non-Science majors in Liberal Arts.)

3 Class Hours, 2 Laboratory Hours

PH 117 Physical Science — 4 Credits

Force, motion and acceleration due to gravity, kinetic and potential energy and the principle of conservation of energy. Thermal energy and the kinetic-molecular model of gases. Electrical forces, binding forces in crystals and electrical current. Atomic structure and the shell model of the atom. PSNS approach (Physical Science for Non-Science majors in Liberal Arts.)

3 Class Hours, 2 Laboratory Hours

Prerequisite: PH 116 Physical Science

PH 118 Physical Science — 4 Credits

Electrical properties of melts and solutions. Ions and ionic crystals. Sizes and mass of atoms and molecular bonding. Non-ionic material, carbon compounds, hydrogen bonding and the metallic model. PSNS approach (Physical Science for Non-Science majors in Liberal Arts).

3 Class Hours, 2 Laboratory Hours

Prerequisite: PH 117 Physical Science

PH 143 Physics (Mechanics) 4 Credits

Composition and resolution of vectors. equilibrium, concurrent and non-concurrent forces, friction, statics, elastic forces, kinematics. Motion: linear, projectile, curvilinear, rotational. For Engineering Technology students.

3 Class Hours, 2 Laboratory Hours

PH 144 Physics (Mechanics, Heat, Sound, Light) 5 Credits

Work, energy, power, impulse and momentum, oscillatory motion, thermometry, thermal expansion, thermodynamics, change of phase, heat transfer. Wave motion, intensity and quality of sound waves. Light, photometry, geometrical optics, reflection and refraction, nature of light. For Engineering Technology students.

4 Class Hours, 2 Laboratory Hours
Prerequisite: PH 143 Physics

PH 145 Physics (Electricity and Magnetism) 4 Credits

Coulomb's law, electric fields, potential energy and potential, DC and AC circuits, electrolysis, magnetism, electromagnetic theory and applications. For Engineering Technology students. **3 Class Hours, 2 Laboratory Hours**
Prerequisite: PH 143 Physics

PH 160 Physics 4 Credits

Structure and language of physics. Length, time, mass, force and momentum. Galaxies and atomic motion. The first course in an introductory noncalculus sequence for Liberal Arts students who need a laboratory science. **3 Class Hours, 2 Laboratory Hours**

PH 161 Physics 4 Credits

Thermodynamics. Electric and gravitational fields, electric charges in motion. Oscillations, waves, radiation. Relativity, the foundations of quantum theory. For Liberal Arts students. **3 Class Hours, 2 Laboratory Hours**
Prerequisite: PH 160 Physics

PH 162 Physics 4 Credits

Atoms and quanta, the structure of matter, nuclei, elementary particles. Astrophysics and cosmology. For Liberal Arts students. **3 Class Hours, 2 Laboratory Hours**
Prerequisite: PH 161 Physics

PH 170 Physics (Mechanics) 4 Credits

Statics and dynamics: vectors, particle kinematics, motion in a plane, particle dynamics, Newton's laws of motion, friction, centripetal forces. Work and energy, impulse and momentum, principles of conservation of energy and momentum, collision phenomena. For Engineering Science students. **3 Class Hours, 3 Laboratory Hours**
Concurrent enrollment in MA 170 Calculus with Analytic Geometry required.

PH 171 Physics (Mechanics and Heat) 4 Credits

Rotational kinematics, torque, rotational dynamics of a rigid body. Oscillations, gravitation, fluid statics and dynamics, waves in elastic media. Temperature, calorimetry, heat transfer, fusion, vaporization, elementary thermodynamics and kinetic theory. For Engineering Science students. **3 Class Hours, 3 Laboratory Hours**
Prerequisites: PH 170 Physics and MA 170 Calculus with Analytic Geometry

PH 172 Physics (Electricity and Magnetism) 4 Credits

Fundamental laws of electric and magnetic fields with application to elementary circuit problems. Electrostatic fields, induced emfs, inductance, capacitance, dielectrics, steady currents, simple transients. Laboratory work consists of electrostatic, electromagnetic and circuit measurements. For Engineering Science students.

3 Class Hours, 3 Laboratory Hours

Prerequisites: PH 171 Physics and MA 171 Calculus with Analytic Geometry

PH 192 Statics 4 Credits

Concepts of forces, moments and couples in static force systems through a vector approach. For Engineering Science students. **4 Class Hours**

Prerequisites: PH 171 Physics and MA 172 Calculus with Analytic Geometry

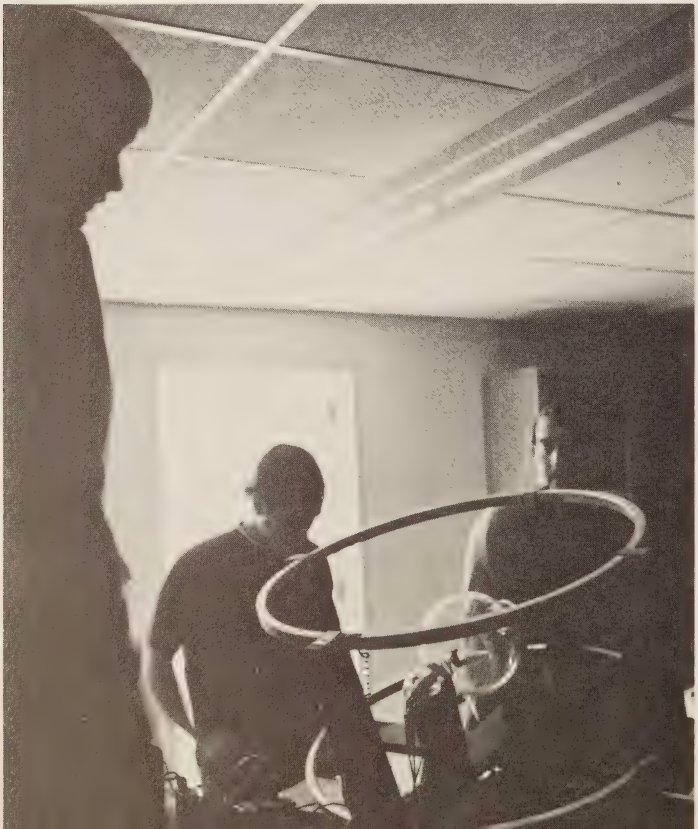
PH 210 Electrical Circuits 4 Credits

DC circuits: meters, Ohm's Laws, Kirchhoff's Law, branch-circuit method, loop-current, Thevenin's Theorem, power, superposition. AC circuits: voltage and current waveforms, power, loads, RLC circuits, phasors, complex plan, Z. Filters and tuned circuits: frequency response, high and low pass filters, tuned circuits, bandwidth, bandpass and band rejection circuits. Diodes: vacuum and semiconductor, thermonic, field and photoelectric emission, transfer curves, doping, junction. Power suppliers: rectification, RC transients, RC filters, choke filters, voltage divider, regulation circuits, bridge circuits, multiplier circuits.

3 Class Hours, 3 Laboratory Hours

Prerequisites: PH 172 Physics and MA 270 Calculus with Analytic Geometry

Energy-to-mass ratio experiment being conducted in the Radiation Laboratory.



PH 211 Electrical Circuits — 4 Credits

Vacuum tubes: triodes, DC and AC characteristics, load lines, coupling, biasing. Voltage amplifiers: AC equivalent circuits, voltage gain, frequency dependence, bandwidth, input and out impedances. Oscillators: basic oscillator circuits, multivibrators, blocking and sawtooth. Pulse and waveshaping: Clipping and clamping circuits, RC coupling, gates and coincidence circuits. Transistors: basic circuits, DC characteristics, biasing, load lines, networks, equivalent circuits, hybrid parameters, transformation equations, feedback.

3 Class Hours, 3 Laboratory Hours
Prerequisites: PH 210 Electrical Circuits and MA 270 Calculus with Analytic Geometry

PH 270 Physics (Light and Sound) — 4 Credits

Wave motion as applied to sound acoustical phenomena. Geometrical optics, optical parts, optical instrumentation. Physical optics, nature of light, interferometry, polarization of light. For Engineering Science students. **3 Class Hours, 3 Laboratory Hours**
Prerequisite: PH 172 Physics

PH 271 Physics (Atomic) — 4 Credits

Special theory of relativity, quantum description of waves and particles, Rutherford scattering, Bohr's theory of atomic structure, Schroedinger's equation, quantization of angular momenta, Zeeman effect, Pauli's exclusion principle, atomic spectra. For Engineering Science students. **3 Class Hours, 3 Laboratory Hours**
Prerequisites: PH 172 Physics and MA 270 Calculus with Analytic Geometry

PH 272 Physics (Nuclear) — 4 Credits

Nuclear radiation detection instruments, high-energy accelerators, nucleons, nuclear force, binding energy of stable nuclei, nuclear models, radioactive growth and decay laws, natural radioactivity, low-energy nuclear reactions, neutrons, fission and fusion, elementary particles, molecular and solid state physics. For Engineering Science students.

3 Class Hours, 3 Laboratory Hours
Prerequisite: PH 271 Physics

PH 290 Dynamics — 4 Credits

Introduction to vector calculus, vectors in curvilinear coordinate systems. Particle motion, particle dynamics, harmonic forces, force fields, the two body problem. Relative motion, dynamics of plane systems, impulse-momentum theorems and energy theorems for the rigid body. For Engineering Science students. **4 Class Hours**
Prerequisite: PH 192 Statics

POLICE SCIENCE

(THESE COURSES ARE GIVEN ONLY IN THE EVENING)

PS 001 Survey of Law Enforcement — 2 Semester Credits

History, development and philosophy of law enforcement in a democratic society. Introduction to agencies involved in the administration of criminal justice. Career orientation.

2 Class Hours

PS 010 Police Administration — 2 Semester Credits

Principles of police management as they relate to organization, functions and activities. Development of policy. Public relations and professionalism. **2 Class Hours**

PS 030 Administration of Justice — 2 Semester Credits

An examination of the mechanism under which justice is dispensed under the democratic system, with emphasis on the organization of courts from the Federal to the local level.

2 Class Hours

PS 031 Criminal Procedure and Constitutional Law — 2 Semester Credits

A review of the steps taken under New York State law to dispose of criminal matters from arrest to appeal, including concepts of probation and parole. **2 Class Hours**

PS 032 Penal Law — 2 Semester Credits

A detailed study of criminal liability and elements of substantive offenses. Defenses to crime and authorized sentences for crime will be reviewed. The course will be based on the Penal Law of New York State. **2 Class Hours**

PS 050 Evidence For Law Enforcement — 2 Semester Credits

A comprehensive analysis of the rules of evidence as they apply in criminal cases, with special emphasis on problems encountered by the law enforcement officer in areas of illegally obtained evidence and wire-tapping. **2 Class Hours**

NURSING

RN 121 Nursing (Meeting Basic Human Needs) — 6 Credits

Techniques in meeting basic human needs. Nursing, observation and communication skills. Care, safety and comfort of hospitalized persons. Applications directed toward maintenance of a therapeutic environment considering individual needs. Related clinical experiences and field trips. **4 Class Hours, 6 Laboratory Hours**

RN 123 Nursing (Beginning of Life Cycle) — 6 Credits

Principles of normal growth and development from conception to early adulthood, including the maternal cycle. Related clinical experiences and field trips to assist the student in understanding the life cycle in normalcy and stress.

4 Class Hours, 6 Laboratory Hours
Prerequisite: RN 121 Nursing

RN 124 Nursing (Continuation of Life Cycle) — 6 Credits

Meeting normal needs of families from early adulthood through middle age, continuing through the later maturing years. Emphasis on normal development and adaptation to stress. Field trips to community agencies and clinical experiences.

4 Class Hours, 6 Laboratory Hours
Prerequisite: RN 123 Nursing

RN 224 Nursing (Assessment of Problems Resulting From Stress) — 10 Credits

Assessing nursing care needs of individuals experiencing physiological and/or psychological stress. Problems of acute and chronic illness. Methods of maintaining a therapeutic environment. Appropriate clinical experiences and field trips.

6 Class Hours, 12 Laboratory Hours
Prerequisites: RN 124 Nursing and BI 138 Anatomy and Physiology

RN 225 Nursing — 10 Credits
(Assessment of Problems Resulting From Stress)

Continuation of RN 224 Nursing. Care of persons with more complex physiological and/or psychological stress problems. Emphasis on persons faced with multiple stress situations. Utilization of community facilities in assisting individuals to cope with problems of stress. Appropriate clinic experiences and field trips.

6 Class Hours, 12 Laboratory Hours
Prerequisite: RN 224 Nursing

RN 226 Nursing — 10 Credits
(Assessment of Problems Resulting From Stress)

Nursing care for individuals with complex physiological and/or psychological stress. Methods of establishing and maintaining a therapeutic environment. Long range plans to return individuals to the community through rehabilitation and use of available facilities. Appropriate clinical experiences and field trips.

6 Class Hours, 12 Laboratory Hours
Prerequisite: RN 225 Nursing

RN 235 Trends in Nursing — 1 Credit

An integrated survey of the historical development, cultural heritage and social foundations in nursing. Study of professional organizations and responsibilities of the professional nurse. A discussion of modern day issues and problems facing nursing education and nursing service and the force of society affecting them.

2 Laboratory Hours
Prerequisite: RN 224 Nursing or permission of instructor

RN 236 Trends in Nursing — 1 Credit

A problem-solving approach to the nurse's responsibilities in meeting the needs of her profession as a member of a health team in a changing society. Discussion of community responsibilities of professional people.

2 Laboratory Hours
Prerequisite: RN 235 Trends in Nursing

RADIOLOGIC TECHNOLOGY

Radiographic technique consists of experience in the radiology department of a cooperating hospital. Observation and practice in positioning the sick and injured patient, obtaining the exact radiograph requested by the physician and assisting in the treatment of disease. Film exposure time, film manipulation and the finished radiograph are critically studied. Throughout the two academic years and summer sessions certain approved radiographs must be completed. These by location include radiographs of extremities, gastrointestinal tract, urinary tract (intravenous and retrograde pyelograms, urethrograms), skull (sinuses, facial bones, mandible), spine, pelvis (hips, hipnailing), shoulder, thoracic cage and cavity (lungs and heart, sternum).

RT 141, 142, 143 Hospital Radiographic Technique — 2, 4, 4 Credits

Practice in positioning, radiographic exposure and film critique in the radiology department of a cooperating hospital. (RT 141 for half-term only).

These three courses must be taken concurrently with RT 171, 172, 173 Radiography, respectively.
16 Laboratory Hours each

RT 144 Hospital Radiographic Technique

Summer practice in radiographic technique and film critique at cooperating hospital. A graduation requirement. **40 Hours in Hospital Radiology Department**

Prerequisites: RT 143 Hospital Radiographic Technique and RT 173 Radiography

RT 150 Orientation — 1 Credit

Orientation to the college and the clinical area. History, ethics and protection of significance to the radiologic technologist. (Half-term only). **2 Class Hours**

RT 151 Patient Care and Medical Terminology — 1 Credit

Use of correct medical terminology for radiologic technologists. Patient care procedures routinely used in departments of radiology. **2 Laboratory Hours**

RT 152 Ethics and Radiation Protection — 1 Credit

Professional ethics and principles of protection of the patient and the technologist from ionizing radiation. **1 Class Hour**

RT 171 Radiography — 4 Credits

Introduction to principles of radiographic exposure techniques, patient positioning in radiography, film handling and processing.

Must be taken concurrently with RT 141 Hospital Radiographic Technique

3 Class Hours, 2 Laboratory Hours

RT 172 Radiography — 4 Credits

Study of routine radiographic positioning in reference to position of patient and proper adjustment of radiologic equipment and film. Use of contrast media and evaluation of radiographs.

Must be taken concurrently with RT 142 Hospital Radiographic Technique

3 Class Hours, 2 Laboratory Hours

Prerequistie: RT 171 Radiography

RT 173 Radiography — 4 Credits

Advanced instruction in development and effective use of radiographic exposure techniques in producing a satisfactory radiologic examination with and without contrast media.

Must be taken concurrently with RT 143 Hospital Radiographic Technique

3 Class Hours, 2 Laboratory Hours

Prerequisite: RT 172 Radiography

RT 233 Radiation Health — 1 Credit

Biomedical aspects of the effects of ionizing radiation together with general and specialized techniques used for protection of patients and personnel. **1 Class Hour**

Prerequisite: RT 274 Radiography

RT 244, 245, 246 Hospital Radiographic Technique — 6, 6, 6 Credits

Advanced practice in radiographic technique and film critique.

RT 244, RT 245 and RT 246 must be taken concurrently with RT 274, RT 275 and RT 276 Radiography, respectively.

24 Laboratory Hours each

Prerequisites: RT 144 Hospital Radiographic Technique and RT 173 Radiography

Radiologic Technology students positioning their "phantom" patient, as they practice taking X-rays in the campus laboratory.

RT 247 Hospital Radiographic Technique

Summer practice in advanced radiographic technique and film critique. A graduation requirement.

40 Hours in Hospital Radiology Department
Prerequisite: RT 246 Hospital Radiographic Technique

RT 251 Pediatric Radiography 1 Credit

Special techniques and problems encountered in radiographing children and infants.

1 Class Hour
Prerequisite: RT 172 Radiography

RT 252 Departmental Administration 1 Credit

Fundamentals of departmental management techniques.

1 Class Hour
Prerequisite: Senior Year Status required

RT 253 Trends in Radiologic Technology 2 Credits

Preparation of the technical report and its organization for both written and oral presentation. Readings in current literature and journals. Occasional guest lecturers.

2 Class Hours
Prerequisite: RT 275 Radiography

RT 255 Nuclear Medicine — 1 Credit

Basic diagnostic tests utilizing radioisotopes.

1 Class Hour
Prerequisite: PH 110 Physics

RT 256 Medical and Surgical Diseases — 2 Credits

Introductory physiopathology including definitions, nature and cause of diseases, as well as lesions affecting organs and systems. Techniques related to examinations where pathological conditions exist.

2 Class Hours
Prerequisite: RT 245 Hospital Radiographic Technique and RT 275 Radiography

RT 274 Radiography — 4 Credits

Continues RT 173 Radiography with advanced positioning techniques involving skull, facial bones, sinuses, mastoids, viscera.

Must be taken concurrently with RT 244 Hospital Radiographic Technique
3 Class Hours, 2 Laboratory Hours
Prerequisite: RT 173 Radiography

RT 275 Radiography — 4 Credits

Basic concepts of techniques and instrumentation of specialized radiographic procedures, including arteriography, rapid film changers, tomography. Also intra-oral radiography.

3 Class Hours, 2 Laboratory Hours
Prerequisite: RT 274 Radiography

RT 276 Radiography — 4 Credits

Concludes positioning and exposure techniques, development and use of technique and tube rating charts, routine maintenance of radiologic equipment, relationship between proper operation of radiologic machines and satisfactory radiographs.

3 Class Hours, 2 Laboratory Hours
Prerequisite: RT 275 Radiography

COLLEGIATE STUDIES CERTIFICATE COURSES

CS 101 Physical Science — 6 Credits

Introductory course of a three-term sequence. The concepts of dynamics and statics. Motion, forces, impulse and momentum, work and energy.

6 Class Hours

CS 102 Physical Science — 6 Credits

Heat and the extension of the principle of conservation of energy, covering approximately one-half term. Then the course is divided into a three-hour course on theories of fields in electricity and magnetism, and a three-hour course on the structure of matter and an introduction to chemistry.

6 Class Hours
Prerequisite: CS 101 Physical Science

CS 103 Physical Science — 3 Credits

Further elaborations of fields and their applications, introductory quantum physics of light and matter, atomic structure and the nucleus.

3 Class Hours
Prerequisite: CS 102 Physical Science

CS 104 Survey of Science — 3 Credits

The generalization of basic chemical-physical concepts and their application to man's environment.

3 Class Hours

Prerequisite: CS 142 Preparatory Chemistry

CS 108 Basic Algebra — 4 Credits

Basic operations with real numbers and algebraic expressions. Solutions of linear systems and quadratic equations. Introductory graphical representation.

4 Class Hours

CS 109 Basic Algebra — 3 Credits

Radicals and their application, logarithms, simple exponential equations and introductory analytic geometry.

3 Class Hours

Prerequisite: CS 108 Basic Algebra

CS 110, 111, 112, Elements of Technical Mathematics — 5, 5, 5 Credits

A three-term sequence of integrated mathematics involving a mature treatment of the topics of algebra, trigonometry and some analytic geometry. Special attention to technical computations using the slide rule, logarithms, scientific notation and dimensional analysis.

5 Class Hours each

CS 113 Plane Trigonometry — 3 Credits

A fundamental course encompassing trigonometric functions and applications. Sine, cosine and tangent functions, reciprocal functions, fundamental relations between the trigonometric functions, graphical methods, solutions of triangles.

3 Class Hours

Prerequisite: CS 109 Basic Algebra or Intermediate Algebra

CS 120 Technical Calculations — 2 Credits

Technical problem solving, applying principles and concepts of the student's concurrent courses in mathematics and CS 101 Physical Science.

4 Laboratory Hours

CS 121 Technical Calculations — 2 Credits

Concurrent with CS 102 Physical Science. Problems involving heat and energy. At approximately mid-term the course is divided into two two-hour sessions emphasizing problems in chemistry and electricity, respectively.

4 Laboratory Hours

Prerequisite: CS 120 Technical Calculations

CS 122 Technical Calculations — 1 Credit

Concurrent with CS 103 Physical Science. Problems involving theories of fields, elementary quantum theory, theories of atomic structure and the nucleus.

2 Laboratory Hours

Prerequisite: CS 121 Technical Calculations

CS 130 Engineering Drawing — 1 Credit

Fundamentals of Engineering Drawing: simple multiview drawing and sketching, with stress on accuracy and neatness in lettering and linework.

3 Laboratory Hours

CS 131 Engineering Drawing — 1 Credit

Orthographic projection, auxiliary views, section views, pictorial drawing, free hand drafting with continued emphasis on accuracy and neatness.

3 Laboratory Hours

Prerequisite: CS 130 Engineering Drawing

CS 132 Engineering Drawing — 1 Credit

Threads and fasteners, welding drawings, working drawings, assemblies, exploded views. Continued emphasis on accuracy and neatness.

3 Laboratory Hours

Prerequisite: CS 131 Engineering Drawing

CS 140 Chemistry — 4 Credits

Rudiments of electrochemistry, thermochemistry, solutions, atomic structure and bonding, descriptive coverage of the more common elements and families.

3 Class Hours, 2 Laboratory Hours

Prerequisite: CS 102 Physical Science

CS 141, 142 Preparatory Chemistry — 4, 4 Credits

A two-quarter sequence of preparatory chemistry intended to satisfy the entrance requirements for biological and health science oriented programs.

3 Class Hours, 2 Laboratory Hours each

CS 150 Communication Skills — 3 Credits

To help the student improve his mastery of study and reading skills. Two sessions weekly devoted to reading skills and one to study skills.

3 Class Hours

CS 151 Communication Skills — 3 Credits

To improve the student's mastery of writing English. Concentration on grammar, sentence structure, spelling, punctuation and the recognition and correction of common errors in basic English elements.

3 Class Hours

CS 152 Communication Skills — 3 Credits

Students practice the skills learned in CS 151 Communication Skills and also apply that knowledge to analyze sample writings of recognized authors in technical and other types of communication.

3 Class Hours

CS 153 Verbal Reasoning — 3 Credits

The first in a three-term sequence designed to improve the student's ability in reasoning. Concentration on qualification, structures and operations, abstractions, signs, symbols and ambiguity.

3 Class Hours

CS 154 Verbal Reasoning — 3 Credits

Concentration on analysis, classification, semantic growth, irony and generalization.

3 Class Hours

Prerequisite: CS 153 Verbal Reasoning

CS 155 Verbal Reasoning — 3 Credits

Concentration on analogies, metaphors, definition, comparison, induction, deduction and problem-solving.

3 Class Hours

Prerequisite: CS 154 Verbal Reasoning

CS 156 Human Potential — 1 Credit

Human potential focuses on the person's own resources, strengths, motivators, values and successful and satisfying experiences. Human potential sessions are structured-positive group experiences working on and with the potential and strengths of the participants. Emphasis on integration of thinking and feeling concerning one's self and others by utilizing specific procedures.

1 Class Hour

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Sponsored by the County of Broome

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B.S., Syracuse University
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Columbia-Greene Community College at Athens
Community College of the Finger Lakes at Canandaigua
Corning Community College at Corning
Dutchess Community College at Poughkeepsie
Erie Community College at Buffalo
Fashion Institute of Technology in NYC
Fulton-Montgomery Community College at Johnstown
Genesee Community College at Batavia
Herkimer County Community College at Ilion
Hostos Community College at South Bronx
Hudson Valley Community College at Troy
Jamestown Community College at Jamestown
Jefferson Community College at Watertown
Kingsborough Community College in NYC
LaGuardia Community College in NYC
Mohawk Valley Community College at Utica
Monroe Community College at Rochester
Nassau Community College at Garden City
New York City Community College in NYC
Niagara County Community College at Niagara Falls
North Country Community College at Saranac Lake
Onondaga Community College at Syracuse
Orange County Community College at Middletown
Queensborough Community College in NYC
Rockland Community College at Suffern
Schenectady County Community College at Schenectady
Staten Island Community College in NYC
Suffolk County Community College at Selden
Sullivan County Community College at South Fallsburg
Tompkins-Cortland Community College at Groton
Ulster County Community College at Stone Ridge
Westchester Community College at Valhalla

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CALENDAR 1973-74

SUMMER TERM 1973

June 11		Classes begin
June 22		Last day to drop courses without grade
July 4		Independence Day recess
July 17	8:00 a.m.	Mid-term grades due
July 31-Aug 13		WP or WF grades issued
Aug. 20		Last day of classes
Aug, 21, 22, 23,		Examinations
Aug. 27	8:00 a.m.	Final grades due

FALL TERM 1973

Sept. 6	8:00 a.m.	Classes begin
Sept. 19		Last day to drop courses without grade
Oct. 12	8:00 a.m.	Mid-term grades due
Oct. 25-Nov. 7		WP or WF grades issued
Nov. 14		Last day of classes
Nov. 15		Study day
Nov. 16, 17, 19, 20		Examinations
Nov. 21	4:00 p.m.	Final grades due

WINTER TERM 1973-74

Dec. 3		Classes begin
Dec. 14		Last day to drop courses without grade
Dec. 21		Last day of classes prior to Christmas recess
Jan. 2		Classes resume
Jan. 17	8:00 a.m.	Mid-term grades due
Jan. 30-Feb. 12		WP or WF grades issued
Feb. 19		Last day of classes
Feb. 20		Study day
Feb. 21, 22, 25, 26		Examinations
Feb. 28	8:00 a.m.	Final grades due

SPRING TERM 1974

March 11		Classes begin
March 22		Last day to drop courses without grade
April 15-19		Spring recess
April 22	8:00 a.m.	Mid-term grades due
May 6-May 17		WP or WF grades issued
May 24		Last day of classes
May 28, 29		Examinations
May 30		Study day
May 31, June 1		Examinations
June 3	8:00 a.m.	Final grades due
June 7		Graduation

SUMMER TERM 1974

June 10		Classes begin
June 21		Last day to drop courses without grade
July 4, 5		Independence Day recess
July 17	8:00 a.m.	Mid-term grades due
Aug. 6-Aug. 19		WP or WF grades issued
Aug. 20		Last day of classes
Aug. 21, 22, 23		Examinations
Aug. 26		Final grades due

MAP OF THE CAMPUS

1. TITCHENER HALL
Engineering Science and Physics
Liberal Arts
Mathematics
Audio-Visual Center
Nuclear Physics Laboratory
Student Lounge

2. ADMINISTRATION BUILDING
Administrative Offices
Admissions Office
Computing Center
Counseling Center
Division of Continuing Education
Finance Office
Public Relations Office
Student Personnel Office

3. SCIENCE BUILDING
Chemical Technology
Dental Hygiene

4. ELECTRICAL BUILDING
Electrical Technology

5. STUDENT CENTER
Bookstore
Cafeteria
Gymnasium
Little Theater
Physical Education

6. MAINTENANCE BUILDING

7. STUDENT ACTIVITIES BUILDING
Student Lounge

8. MECHANICAL BUILDING
Civil Technology
Mechanical Technology
Faculty Offices including
Environmental Health
Medical Laboratory
Liberal Arts

9. CECIL C. TYRRELL LIBRARY
Health Service Office
Student Lounge
Department Offices
Medical Laboratory
Medical Office Assistant
Medical Record
Nursing
Radiologic Technology

10. BUSINESS BUILDING
Administrative Management Dept.
Marketing Management
Secretarial Sciences

11. FACULTY OFFICES